

# The Indian Primary & Secondary Education Megaproject

## Project Concept Document



High Quality Education to Upto 126 Million Children Simultaneously  
Absolutely Free Of Cost

**A Innovative financial solution**

**to implement**

**“ The Right Of Children To Free & Compulsory Education Act ‘ 2009 ”**



**The Nataraja Foundation**

Project Proposal

Submitted to

**The National Knowledge Commission & Ministry of HRD  
Govt. Of India**

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# The Indian Primary & Secondary Education Megaproject

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## 1.0 PROJECT GENESIS

The idea behind this large “ Teacher Centric “ education project was born in **December ‘ 2005** during the golden jubilee celebrations of the Military School in Belgaum, Karnataka, where I had gone to meet my teachers and classmates.

After meeting my teachers , most of them in their 70’s, and meeting some of the current staff I felt that there was a need for a project which was targeted at teachers with the objective of attracting the best minds , once again , to a career in teaching. Setting up one such school as a pilot project to establish proof of concept was what I had in mind.

I therefore started enquiring about the procedure to be followed for setting up a school. My findings shocked me. Not only was it extremely expensive but it also required a huge number of clearances and a lot of government red tape. It then occurred to me that there was , at first , a big need to think of ways to make it easier for people, with an interest in education, to set up schools. So began a process of study that would consume most of the free time I would have over the next 3 – 4 years.

My experience as a corporate planner and project designer has trained me to look for a solution in everything I read. This solution could then be incorporated in the project design. After years of working on industrial projects ( Refineries, LNG Terminals , Ports and Pipelines ) , “ Education “ was my first attempt at social infrastructure. It must be mentioned here that all my reading was directed at a search for solutions, not for problems, because a solution, usually , is not found within current structures. The problems were studied , of course , because they reflect current realities, but always, the focus was on possibilities.

I had been travelling by local train in Mumbai since 1992 to attend office in south Mumbai and the Nariman Point area. However since my office shifted 3 years ago to a place closer to my home in Navi Mumbai, my Nariman Point visits have become rare and I now make the trip just once in two months. This change in my schedule has allowed me to really notice my surroundings as I travel in the train. What I have noticed is that though the number of people using the train has gone up substantially , things have changed drastically, especially within young commuters as a class. In the last 3 – 5 years, major changes are visible in the younger population as a class that uses the train. Younger people 5 years back , used to look bathed , their clothes were ordinary , just like my own , but they were washed. Today, while most have mobile phones , they generally look un-bathed and their clothes are unwashed . This is true even with the first class passengers. The point I am making is, this is not happening in just any city, this is happening in India’s financial capital.

You do not need to search for information on this deterioration in quality of people in any text book. It is right in front of us , on the street , in the malls, on the railway platform and it has everything to do with the quality of our schools and especially with the quality of people who are taking up the teaching profession in India today. In hundreds of thousands of schools in India therefore, things have been going very wrong. **Even more scary is the fact that over the last 30 years , India has spent very little money on building new schools.**

Therefore, starting in April 2007, I began thinking in terms of a much larger project. At that time many senior industrialists , politicians and professors were talking about India’s huge young population and the enormous demographic dividend that this young population would bring to the country. I saw the whole thing very differently , I was in total agreement with the numbers of course ( over 100 Million young people coming out of school in 10 – 11 years ... that was 2007 ) , but I differed on the demographic dividend part. It was quite clear to me that no one in government or in Industry or academia had a proper plan for these young

people and it was obvious that 90 % of them would have no employable skill when they passed out of school ... it was a frightening prospect.

The Education Megaproject has therefore been conceived as large capex plan for education in India. The project scale was however not the problem , the main problem lay in raising the massive sums of money required. This is the area wherein the project has innovated. The scheme , as you will agree , after reading it , has been designed with care and it brings some of the best ideas in finance from around the world to bring education to some of the poorest communities in India.

I would like to thank the many senior people , friends and colleagues both within the Nataraja Foundation and outside, among them Mr. S Natarajan & Mrs Natarajan, Mr. Sunil Mor, Dr. Urjit Patel , Mr. Tarun M Agarwal , Mr. Yeshwant Rao & my wife Amrita who have helped with suggestions and advice on the various criteria that have gone into the design of the Education Megaproject. I would also like to thank Lt. Gen Vijay Oberoi , PVSM, AVSM, VSM , Former Vice Chief Of Army Staff, based on whose inputs “ The Community Security & Leadership Development Programme “ has been entirely re-written. Finally , I would like to thank Mr. IL Budhiraja , my former boss who has taught me much of what I know in the area of project design. In fact, if I had not been his executive assistant between June 1998 and 2000, this project might never have been written. Some of his thinking shows up in this work and will continue to affect other projects that I design in future. However, any error in my work now and in the future will be mine alone , maybe because I have not been as attentive as I should have been when he was talking “ concepts “ .

It is strange, I started off by thinking of building just one school and finished with a minimum design solution of 30,000 hub schools in small towns and a teacher sharing programme that would reach an additional 420,000 rural schools. The project may however still not be able to reach the last of the 126 Million Children that are it's targets because the unmet demand for a decent education is so huge in India. Maybe someone else may improve upon the ideas and the execution schematic recommended in the following pages. I would be very happy if new and better ideas come in , as then we will have some hope for our teeming millions.



Ashish Puntambekar  
Project Designer  
[www.nataraja.org.in](http://www.nataraja.org.in)

Mumbai ' 02<sup>nd</sup> April ' 2010

### **PROJECT NEED**

**The purpose of this section is to establish the need for a large & well planned Capital Expenditure Project in India in the area of Primary and Secondary Education. Data is presented which shows that India has invested very little in new schools for the last 30 years.**



The Indian Primary & Secondary Education Mega Project

The Nataraja Foundation

2.0 PROJECT NEED

Over the last 30 years, India has invested very little money to build new schools despite the huge increase in the population. There have been through several experiments with the objective of realizing the goal of Universal Elementary Education for all children below 14 years of age. The government has tried several schemes, the most prominent being “Operation Blackboard” in 1987, The District Primary Education Programme in 1994 and more recently the government’s flagship programme, The Sarva Shiksha Abhiyaan (SSA) which was launched in 2001.

While all these schemes have focused on spreading literacy, a common thread running through all of them is the un-stated constraint of availability of funds. All these programmes were therefore inclined to focus on policy options which could get the fastest results.

The low cost options that were selected for implementation over the last 30 – 40 years, mainly due to financing constraints, have left in their wake huge problems within the Indian Education System. On the one hand these policy options warped the economic choices young people make, which has driven the worst qualified people to take up the most important of all jobs in the country (teaching our children) and ... secondly it has skewed the whole system towards a disastrous leaning on “instant result projects” where close to 90% of the budget on education is spent on revenue items such as salaries with little money left for building new institutions. This has resulted in the weakening of institutions in both human and material ways.

The table below compiled from the Ministry of HRD website and other government sources clearly shows that between 85% - 90% of the funds allocated to education were spent on teacher salaries and other revenue expenditure with very little money being spent on new schools.

The data in Bold Green is assumed at 0.75% of Total Expenditure on Education (Specific Capex Data is not readily available for these 15 years)

Table 1 : Analysis Of Budgeted Expenditure On Education ( Capex Vs Revenue Expenditure )

Sl. No.	Year	Revenue Expenditure, Education + Other Depts. (Centre+States)	Capital Expenditure, Education + Other Depts. (Centre+States)	Loans & Advances, Education + Other Departments (Centre+States)	Total Expenditure, Education + Other Depts. (Centre+States)	Expenditure On Education as a % Of GDP (Centre+States)	% Of Capital Expenditure to Total Expenditure on Education ( Centre+States)
1	Apr88–Mar 93	98302.16	737.27				0.75
2	Apr93–Mar 98	191512.62	1436.34				0.75
3	Apr98–Mar 03	384245.52	2881.84				0.75
4	2003 - 04	89079.25	645.46	6.92	89731.63	3.49	0.72
5	2004 - 05	96694.1	672.21	8.46	97374.77	3.39	0.69
6	2005 - 06	116252.47	1573.38	42.96	117868.81	3.58	1.33
7	2006 - 07	132749.28	1503.91	21.2	134274.39	3.57	1.12
8	2007 - 08	161432.49			161432.49	3.57	
9	2008 - 09	258012.00	10750.00		268762.00	3.57	4.00
10	2009 - 10	318527.00	9851.00		328378.00	3.57	3.00
11	2010 - 11	360428.00	7356.00		367784.00	3.57	2.00

- Sources :
1. Ministry Of HRD, Govt of India
  2. Paper By CP Chandrashekhar & Jayati Ghosh \*
  3. Education Deptt. ( Ministry of HRD, Govt Of India )
  4. Education For All In India Website

Numbers in bold red are actual Capex (Very Low)  
 Numbers in blue are projections \*  
 Numbers in pink represent actual money spent  
 Highlighted Green assumed ... lack of data

Data Links

[http://www.macroskan.org/fet/jan06/pdf/Public\\_Expenditure%20.pdf](http://www.macroskan.org/fet/jan06/pdf/Public_Expenditure%20.pdf)  
<http://www.education.nic.in/planbudget/GDP51-06.pdf> ; <http://www.education.nic.in/planbudget/GDP51-09.pdf>

As the table shows, the forward projection for the next few years also has very little provision for the New schools that are required to make Universalisation of Elementary Education ( UEE ) a “sustainable“ reality.

The RTE Act has been notified on the 1<sup>st</sup> of April ‘ 2010. There are however serious challenges to the implementation of the Act as most of the funds required ( estimated at **Rs 170,000 Crores** over the next five years ) will be spent on revenue items and to maintain the current system. A very small percentage of this money will then be available as capital expenditure ( Capex ) to build new schools. Briefly put, this means that without a proper and sizeable Capex Plan , the current plan to implement the RTE act is simply not sustainable as it does not build new schools on the scale that is actually required. This is a real issue as the RTE Act is justiciable legislation which means that the Government Of India can be taken to court ( pursuant to the notification of the RTE Act ) if it is unable to provide education to all children in the age group 6 – 14 years.

The absence of a Capex Plan and the lack of ideas as to the means of financing such a plan therefore presents a huge problem to the Government of India. Till date , no one has been able to come up with an out of the box solution as to how the massive sums required are to be raised to finance the thousands of new schools that India desperately needs.

A **UNESCO** study in 2003 had found that India had 1/3 rd of the world’s children out of school. This number according to the study was **40** million in 2003. More recent studies , notably , under the aegis of the Sarva Shiksha Abhiyan, estimated the number of out of school children at **13.5** million in 2005 and **8.04** million in 2009. **No one however is talking about the quality of the schools that the children have been enrolled in or the very high dropout rates due to the very poor quality of infrastructure in both urban and rural schools.**

A 2005 – 06 study ( **EI 2005-06** ) by the New Delhi based National University of Educational Planning and Administration ( NUEPA ) , confirms that 45 % of the country’s 4.7 million elementary school teachers have not studied beyond class XII, while a quarter of them have not studied beyond secondary school i.e. class X. The study, conducted across 28 states and 7 Union territories found that a mere 35 percent of teachers in classes I-VIII are graduates, and only 17 percent are postgraduates.

<http://www.educationworldonline.net/index.php/page-article-choice-more-id-1052>

We need to think very clearly here. The data above is crying out for a new conceptual approach to the problems that have been created due to the weakening of educational institutions. Crucially , it is important to understand that if any more money is spent within the current “ Revenue Expenditure “ focused plan it will vanish as most of this money (85%) will be paid as salaries to 4.7 million teachers, **2.1** Million of which have not passed class XII. **It is ill advised to spend money like this.** Now if we consider the current teacher student ratio @ 1:40 ( Govt stated ratio ) and the un-official 1:60 ... it means that anywhere between **80 – 120 Million children** in India are being instructed by people who themselves have not passed some very basic exams. If the Sarva Shiksha Abhiyan ( SSA ) continues to build on such weak foundations it is doomed to collapse. The human cost of this will be astronomical.

The resolution of these problems needs a sort of “ **Marshall Plan** “ for education in India with a focus on primary and most importantly, secondary education as it is better to give sound foundation level instruction to the vast majority of our people , than to focus on higher education and have most of those people going abroad.

The Education Megaproject discussed in the following pages, will in one giant step double the size of the primary and secondary school market in India and greatly improve its quality.

This project is different from all other education projects currently under consideration in India in four crucial respects, due to it's :

1. Teacher Centric nature ... with the objective of attracting the best minds to a career in teaching
2. Use of Communications Technology... to improve the Sarva Shiksha Abhiyan ( SSA )
3. Focus on Capex to generate human resources necessary to sustain a **US \$ 4.5 Trillion** economy that India will be by **2025** and to provide a base for further expansion of the GDP beyond 4.5 Trillion.
4. Innovative approach to financing to meet the large Capex and Opex needs of the programme

The proposal that follows is action oriented. It urgently argues the case for deploying new ideas in financing, so as to increase the number of schools and it shows how the required cash can be raised without creating inflationary pressures within the economy. The proposal therefore avoids the endless analysis that has been going on for the last **20** years and concentrates instead on **planning** and then ...**execution** issues.

It needs to be specially mentioned here that the current provision within the **RTE Act** which requires even private unaided schools to reserve **25 %** of their capacity for children from poor families , is a totally wrong approach to the problem of huge capacity shortages in primary and secondary education in India since it discourages new investment. While we fully agree with the view that the poorest children must get the best education possible, it is also important to ensure that policies are framed in a manner that encourages new investment. There is a need to replace current myopic thinking with a more mature and planned approach to creating capacity in the education sector. This is the objective of the proposal that is presented in the following pages.

It is hoped that the Government of India will give The Primary & Secondary Education Megaproject serious consideration as this is a very do-able project.

## PROJECT EXECUTIVE SUMMARY

This section provides a brief overview of the Education Megaproject.

- Snapshot of commissioning schedule & focus states in Phase I
- Marco view of the current state of primary education in India
- What can be done to improve the performance of the Sarva Shiksha Abhiyan ( SSA )
  - Cutting cycle time through Email and SMS alerts
  - The Contextual Communications Platform & Digital dashboards
- A Fundamental conceptual error in our understanding of education and literacy
- Building a new system to meet the Human Resource needs of a **US \$ 4.5 Trillion Indian Economy in 2025**
- Education Megaproject Financing
  - Construction Phase...Raising **US \$ 131.38 Billion** ( Over 11 years )
  - Operations Phase ... Raising **US \$ 42.57 Billion** ( Each Year after 2023 )
- The Teacher Sharing Programme
- The 18 Million Education Voucher Programme as a tool to reach **420,000** additional schools under the “ Teacher Sharing Scheme ”
- A Mention of the 25 different project design criteria

### 3.0 PROPOSAL EXECUTIVE SUMMARY

India has invested very little money in building new schools over the last 30 years even though the population has risen dramatically. Capacity addition is therefore a critical need.

This education mega-project involves the setting up of **30,000 new schools** across India in 28 States and 7 Union Territories between **2012** and **2023**. Phase I of the project will focus on six states that account for 3/4<sup>th</sup> of the out of school children and the largest number of school dropouts. The Phase I states are Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Andhra Pradesh and West Bengal.

Phase	Number of Hub Schools	Number Of Assisted Schools ( Teacher Sharing Programme )	Commissioning Schedule
Bootstrap I	-	-	<b>Q1- Q4 2011</b>
Bootstrap II	-	-	<b>Q1- Q4 2012</b>
Phase I	<b>6000</b> Hub Schools	<b>84,000</b>	<b>2012 – 2014</b>
Phase II	<b>9000</b> Hub Schools	<b>220,000</b>	<b>2015 – 2017</b>
Phase III	<b>15000</b> Hub Schools	<b>420,000</b>	<b>2018 – 2023</b>
<b>Phase IV</b>	Possible repeat of total project ( another 30,000 schools ) to cover 4,20,000 additional schools		<b>2023 – 2029</b>
<b>30,000 New Schools to be commissioned by 2023</b>			
<b>Notes :</b>			
1. Each Of Bootstrapping stages I & II will consist of <b>250</b> Teacher Training Institutes to train <b>300</b> teachers each per year + <b>60</b> Centers of Vernacular Architecture to train <b>300</b> Master Masons each year. <b>Bootstrap II</b> will be a repeat of <b>Bootstrap I</b>			
2. It is not possible to execute Phase I of this project faster as India currently does not have enough trained teachers who possess the necessary capability / sensitivity to train young minds. This problem will be overcome by <b>2016</b> after which project execution velocity will pick up.			
3. <u>Phase IV could essentially be a repeat order which will repeat phases I, II and III in half the time.</u> It will be possible to dramatically crash commissioning schedules due to retained learning within the project enterprise.			
4. Each day school will operate in <b>two shifts</b> to maximize coverage while keeping costs low.			

On the structural plane , central to the thinking behind this project is the belief that a significant reason for the steep decline in the quality of human resources in India has been the neglect of the teaching profession and teachers as a class over the last several decades. In India today, a crane operator with 5 years of experience makes more money than a Professor in Economics or a school teacher with a proper BEd degree and with 10 years of teaching experience with primary and secondary school children. This has warped the economic choices that a fresh graduate makes and has resulted in the least qualified individuals handling the most important of all the jobs in this country, the teaching of our children and tomorrows citizens .

This project proposal also takes note of the fact that India reached the height of her glory when the teacher was at the head of our society and therefore seeks to bring back this long lost Indian tradition through an innovative mechanism on a truly massive scale. The whole project therefore is designed around the primary & secondary

school teacher ( **Project is not centered around the student or on literacy** ) with a view to creating a simple yet elegant lifestyle around the teaching profession, thereby correcting a macro imbalance in our society by getting the best minds back into teaching in a game changing manner. However, while the project is “ Teacher Centric “ and makes teaching an attractive profession, it does take care to set in place a robust self regulatory mechanism that gets around regressive developments that have created a serious “Teacher Absenteeism “ problem in India. This will be possible through a strict contractual arrangement , that ensures greater accountability of teachers within the new school system of **30,000** schools and its associated network of **420,000** additional village schools where a teacher sharing programme will be implemented.

The Education Megaproject is also a large systemic integration effort which will help bring global best practices in education to our village schools through its teacher sharing programme. It will also bring new thinking and project execution methodologies to the existing school system, thereby greatly improving the system.

**To understand the problems within the existing school system, the way it has been built and what needs to be done to improve it , we need to go through some key statistics.** The tables below taken from the XI th plan report illustrate the state of affairs in primary education over the last 10 years in India in terms of physical infrastructure.

**Table 2. Progress in Elementary Education Since 1999**

Sl. No.	Indicators	1999-2000	2004-05
1	Primary Schools	642000	767520
2	Upper Primary Schools	198000	274731
3	Teachers in Primary	1919000	2310800
4	Teachers in Upper Primary	1298000	1439146
5	Enrolment in Primary	113.61 Million	131.69 Million
6	Enrolment in Upper Primary	42.00 Million	51.67 Million
7	Public Expenditure on Education ( as a % of GDP )	3.77 %	3.74 % ( 2003-04 )

Huge infrastructure gap at the Upper Primary level

Huge Dropout Rate.

Where have 70 -80 Million Children Gone ?

Source : [http://www.education.nic.in/Elementary/main\\_final.pdf](http://www.education.nic.in/Elementary/main_final.pdf), RGI, SES, MHRD

The table above indicates that there has been **improper capacity addition at the upper primary level** and that most of the students passing out of primary schools have no school to go to after class V.

**Table 3. Growth of Educational Institutions Since 1999**

Sl. No.	Year	Primary	Upper Primary	Pry Vs Up. Pry School	Approx Incurred (In Crores of Indian Rupees)	Capex
1	1999-2000*	641695	198004	3.2	247.95	
2	2000-2001*	638738	206269	3.1	400.71	
3	2001-2002*	664041	219626	3.0	769.44	
4	2002-2003*	651382	245274	2.7	521.26	
5	2003-2004*	710471	262649	2.7	362.47	
6	2004-2005*	767520	274731	2.8		
<b>Total Capex Incurred on primary schools over 5 Years</b>					<b>2301.82 Crores</b>	
	<b>Annual rate of growth since 1997 - 98</b>	<b>2.7 %</b>	<b>6.9 %</b>			

Source : [http://www.education.nic.in/Elementary/main\\_final.pdf](http://www.education.nic.in/Elementary/main_final.pdf), SES, MHRD. \*Provisional , Capex has been calculated separately using assumed cost numbers of Rs 1.5 Lakhs / Classroom and @ 2 classrooms / school.

The number of schools added looks large but it must be remembered that just Rs 2302 Crores were spent in 28 states and 7 union territories over the 6 – 7 year period covered by the study . Therefore the amount spent / state ./ year has been very tiny. The results in terms of the quality of basic infrastructure created can be seen from the planning commission’s report.

**Table 4. Schools without basic facilities ( Percentage )**

Sl. No.	% Of Schools Without Facilities Like	Primary		Upper Primary	
		2004-05	2005-06	2004-05	2005-06
1	Buildings	3.5	3.0	2.8	2.4
2	Toilets	51.4	44.6	16.8	15.3
3	Boundary Walls	50.4	50.8	15.7	16.5
4	Drinking Water	16.3	15.1	4.7	4.8

Source : Planning Commission ( Xlth Plan Report ) , DISE Data  
[http://www.education.nic.in/Elementary/main\\_final.pdf](http://www.education.nic.in/Elementary/main_final.pdf)

**If 45 % of schools in India do not have Toilets  
 How can Girls go to school ?**

Tables 3 & 4 ( above ) need to be seen together . What stands out is the fact that capex is not being committed with a **25 – 30 year vision** in mind. More specifically, the data also indicates that there are major issues with project concept, design and execution within the education sector where schools are being built without toilets, boundary walls and drinking water facilities.

Over the years the government has tried several schemes, the most prominent being “ **operation blackboard** “ in 1987, **The District Primary Education Programme** in 1994 and more recently the government’s flagship programme, **The Sarva Shiksha Abhiyaan ( SSA )** which was launched in 2001 has now been linked to the **Mid-Day Meal scheme** with the objective of increasing enrolment and retention. The SSA has now become the primary vehicle for implementing the “ Education For All “ intention of the government of India and a total of **192** million children are said to be covered by the SSA. However , there are conceptual issues in the SSA – Mid Day Meal linkage that need to be understood and resolved. This is now discussed.

Close to 200 Million people go hungry every day in India and a sizeable percentage of these are women and children. As education cannot be imparted to children with empty stomachs, there is no doubt that our children must have access to at least 1 meal a day. The key objectives of the Mid Day Meal Scheme therefore were to protect children from classroom hunger, increase school enrolment and attendance, improve socialisation among children belonging to all castes and empower women through provision of employment. The landmark Supreme court judgement in Nov 2001, has now ensured this and the approximate cost each year for an all India implementation ( All States and Union Territories ) of the Mid Day Meal Scheme is in the range of **Rs 4800 – 4850 Crores.**

Experience gained over the last few years and data gathered are now suggesting that the Mid Day meals scheme and it’s linkage to the SSA and therefore learning, is itself conceptually flawed and we need to be very clear in our minds about this. **Free food appears to have nothing to do with learning especially after class V** and this inference can be clearly drawn from the numbers published by the planning commission itself in its **XI<sup>th</sup>** Plan working group report .

Dropout rates are high because there are not enough schools after the Pre-Primary Level . 70 - 80 Million "Literate" children have dropped out of school. ( Table 2 )

**Table 5. Dropout Rates In Indian Schools ( % )**

<b>Class I – V</b>				<b>Class I - VIII</b>			
	2001-02	2002-03	2003-04		2001-02	2002-03	2003-04
<b>SC's</b>							
Boys	43.73	41.13	36.83		58.61	58.24	57.33
Girls	47.05	41.91	36.19		63.63	62.19	62.19
<b>ST's</b>							
Boys	51.04	50.82	49.13		67.28	66.86	69.04
Girls	54.07	52.10	48.67		72.69	71.17	71.43
<b>All Students including SC's / ST's</b>							
Boys & Girls	39.03	34.89	31.36				

Sources : Planning Commission ( XIth Plan Report ) , DISE Data, SES  
[http://www.education.nic.in/Elementary/main\\_final.pdf](http://www.education.nic.in/Elementary/main_final.pdf)

After looking at all this data, including dropout rates , we really need to ask ourselves if we are making some fundamental conceptual errors in the way we are planning the education of our children in this country. With a **38 %** dropout rate by class V and a **60 %** plus dropout rate by class VIII **what is the SSA achieving and what can it achieve** when 45 % of the teachers within the programme have not cleared their class XII exams ?

There is clearly a need for new thinking.

It is not just that the schools are being built without toilets and boundary walls and a lot of other things but the fact that in our obsession with spreading literacy we have forgotten the first and last thing that is absolutely fundamental to the entire education process " **The Central role of the Teacher** " and that without paying attention to this central issue the rest of what we are doing is unsustainable.

As a first step , we need to clearly understand that the problems within the education sector in India today cannot be solved with the same level of thinking that created the problems in the first place and a totally different " Teacher Centric " approach is required to get the system back on track. **Secondly we need a new macro picture or reference frame to justify the huge amounts of capital expenditures which will see close to a 500 % increase in capital expenditure on primary and secondary education over currently planned levels** which will commence in **2012** and will be maintained till **2023** at a minimum. This is basically what the Education Megaproject does.

A certain quality of Macro thinking therefore has gone into the design of this project. Fundamental to this thought process is the view that India is going to see huge investments of the order of **US \$ 1.7 Trillion** in Infrastructure ( Roads, Ports , Airports, Power Plants, Hospitals, Schools, re-development of old and decaying cities and the creation of new settlements ) over the next 10 – 15 years as estimated by the Investment banking firm Goldman Sachs in its January 2009 report. Assuming a Infrastructure Investment Multiplier effect of **3** ( conservative ) from the associated construction activity alone , the net addition , in terms of new business within the Indian Economy by 2020 – 2025 will be of the order of **US \$ 5.1 Trillion**. This investment multiplier effect combined with a growth in consumption and production in other sectors will yield a 2025 GDP level of **US \$ 4.5 Trillion** ballpark. The Mckinsey and Co. estimate of GDP for the Indian economy circa 2025 is **US \$ 4.01 Trillion** based on a sustained real GDP growth rate assumption of 7.3 % PA while the Goldman Sachs BRIC Report estimates Indian GDP in 2025 at **US \$ 3.174 Trillion**. Our estimate of **US \$ 4.5 Trillion** is more bullish as we have factored in the productivity gains of the Education Megaproject. In doing so we believe we are being very conservative.

No current, organized, HR requirement plan for the Indian economy in 2025 is being conceived with such a realistic macro picture in view. This is because, most people have not really thought about what these projected numbers mean for a population of nearly 1.2 Billion people and the huge HR and skill set requirements that investments of this magnitude entail. The Education Megaproject has been conceived with this Macro thinking clearly in mind and it's scale is not to be looked at as a dream that we as Indians could possibly aspire to live but as an **absolute necessity** without which India will have social problems of the most serious kind.

In this context, it needs to be highlighted that over the next 6 – 8 years, in excess of 100 Million children in India will move out of the school going age group without any employable skills. Today the presence of this massive young population is being looked at as a demographic dividend, **however within just 6 – 8 years this group of young people will pose a serious threat to India's demographic stability** and it will create un-imaginable problems if the creative energies of these young people are not properly directed. It is for this reason that **Execution Velocity** has been made a critical design parameter within this project proposal. In practical terms, this has dictated a project structure wherein it becomes extremely necessary to execute the Education Megaproject outside the Ministry of HRD because not doing so could endanger demographic stability in South Asia by 2018. Pakistan and Bangladesh are spinning out of control and we in India are going to be subjected to an influx of nearly **5 – 7 million** refugees mainly from Pakistan over the next few years. We need a very well thought out education project that will help absorb the huge shocks that our society is going to be subjected to between 2011 and 2015.

Given the poor project execution track records in India, the project has made allowances for huge slippages by including within the projects scope, excess capacity ( evening vocational classes ) for people who have moved out of the school going age bracket so as to enable them to pick up employable skills. This programme will be discussed later in the project document.

Having established the need for a new and huge Capex programme targeted at primary and secondary education in India, it is now time to move on to execution related issues and the financing aspects of this large venture.

### **3.1 PHASE I : IMPROVING THE EXISTING SYSTEM**

We must first do what Theodore Roosevelt believed in and practiced “ **Do what you can, with what you have, where you are** “.

We must therefore first improve efficiencies within the current SSA and its associated Mid Day Meal Scheme. Currently the system has serious execution and operational issues with respect to not just fund flows and their timing but also in the leakage that is taking place. To make this happen we must at first radically change the SSA's information architecture and associated information flows. **This can be done in 18 – 24 months to secure the first quick wins.**

One of the Sarva Shiksha Abhiyan's ( SSA's ) greatest weaknesses is that the opaqueness within the system makes it very difficult to find out where decisions are being held up. There is therefore no predictability in fund flows to the schools due to procedural delays within the central and state governments. In practical terms this means that once orders are issued and funds are sanctioned at the ministry level, there is no proper system to find out who is delaying things down the chain and why.

Secondly , as the Annual Survey of Education ( ASER ) Report 2009 reveals, because of the lack of transparency in the system and layers of red tape , in many instances , even the headmasters of schools are not aware of the different grant components, when they will arrive or what they can and cannot be spent on. To add to all this are the SSA's rule based procedures which are too rigid and norm based which makes it very difficult to adapt the system to local needs.

Today though there is a lot of information available within the system , the information architecture that is currently deployed does not allow the system to operate in real time for it to be of much use. For instance the following link ( below ) takes us to a small village school in Betauli village , in the Jehanabad district in Bihar. There is a lot of data on this link about this village school dated **Sept 2008**...but this data is **totally useless** for operational purposes.

<http://www.schoolreportcards.in/seeschoolreportdetail09.asp?cmbsschool=10330300201&cmbstate=10&cmbdistrict=1033>

To make the whole thing work efficiently , we need a different , yet low cost architecture while allows us to save thousands of crores through better operational efficiencies , by making the assets sweat and by making every rupee count and by preventing leakage and fraud that are commonplace today ( please refer extracts from CAG report within the chapter “ Project Design and Execution Concepts in Detail “ exhibits 1- 4 .

To avoid the current problems stated above we suggest the adoption of a low cost , next generation , advanced IT platform which will make people and their transactions totally transparent. The system will, after a proper mapping process , create **dynamic, real-time digital dashboards** with drill down capability combined with contextual alerts to identify potential and actual sources of problems within the system in real time. Using this technology and its sophisticated protocols it will be possible to drill down from the national level to the state level to the district / taluka level and even to the level of the individual school. **Therefore if someone within the system is holding up decisions, his / her name will be flashed as an alert, both to his / her superiors as well as to the affected schools and to all the associated NGO's,** thereby making the whole system extremely transparent and making it next to impossible for anyone to drag decisions.

**Also when funds are released by the ministry of HRD or the concerned state government, the headmaster of each school ( based on a school budget code number ) , will receive an alert through a simple internet connection at the nearest town / village or SMS facility on his mobile phone. The alert will inform him when funds for his school have been released and it will also clearly state what the grant component can be spent on. This will cut down the waiting time from a couple of months and endless visits to the district or state headquarters to a few minutes if everything is online.** Even if we account for a few delays in govt. offices , we can still cut cycle time to 2- 3 days. **We have the technology to achieve this today at a cost which is a fraction of what we might imagine.** Government of India can contact any good technology vendor to get a quote for the installation of such a system wide information architecture. A detailed note on the various features of the Education Megaproject's information architecture is a part of this concept document as Annexure 3.

**Teacher Absenteeism is a major problem in India** and as mentioned earlier, in most states, teachers do not bother to attend school for **25 %** of a working year. This means that teachers come to school for just 188 days each year. Since “ Teacher Absenteeism “ is such a huge problem and since tens of millions of children and their parents are suffering there needs to be a system that ensures teacher accountability. The Education Megaproject's communications platform will therefore be configured to allow access to NGO's who will input information / complaints regarding teachers attendance in village schools. **Once a certain pre-determined score / instances of absenteeism is accumulated within the system**

regarding a certain teacher , the system will generate an alert and put in place a penal process with a show cause notice in the first instance. If the defaulting teacher does not reform , his / her habits, the system will generate termination of service proceedings against the errant teacher who will be dismissed from service for repeated defaults after being given a fair hearing by a district level education committee. If the district level committee cannot take a decision and default continues by the teacher , the system will refer the case to a state level committee which will follow a proper legal process consisting of hearings and the submission of evidence against errant teachers. Once a decision in the matter is taken by the state committee it will be final and binding on all concerned.

If NGO's also get involved with this in a supportive role , it will cut teacher absenteeism, system leakage and fraud to near zero levels.

### 3.2 PROJECT PHILOSOPHY

A very serious conceptual flaw lies un-noticed in the current Govt. Of India understanding of the concept of literacy and education. In fact this flaw is within all western education systems. India , in **blindly copying** the west has forgotten it's own very sophisticated concepts about the learning process.

Swami Vivekanand has clarified these concepts very clearly and his words have become the guiding principles on which this Education Megaproject is based. To clarify the concepts and correct our national approach to literacy and learning it is perhaps best to quote Vivekanand directly.

#### Vivekanand Proclaims

**“ Education is the manifestation of the perfection already in man.”**

“ Knowledge is inherent in man, no knowledge comes from outside; it is all inside. What we say a man ‘ knows ’, should in strict psychological language , be what he ‘ discovers ’ or ‘ unveils ’. What a man ‘ learns ’ is really what he ‘ discovers ’ by taking the cover off his own soul, which is a mine of infinite knowledge. We say Newton discovered gravitation. Was it sitting anywhere in a corner waiting for him ? It was in his own mind; the time came and he found it out. All knowledge that the world has ever received comes from the mind; the infinite library of the universe is in your own mind. The external world is simply the suggestion, the occasion , which sets you to study your own mind. The falling of an apple gave the suggestion to Newton , and he studied his own mind. He rearranged all the previous links of thought in his mind and discovered a new link among them, which we call the law of gravitation. It was not in the apple nor in anything in the centre of the earth.”

**“ All Knowledge Is Within ”**

“All knowledge therefore,secular or spiritual, is in the human mind. In many cases it is not discovered , but remains covered, and when the covering is being slowly taken off, we say ‘ we are learning ’ , and the advance of knowledge is made by the advance of this process of un-covering . The man from whom this veil is being lifted is the more knowing man; the man upon whom it lies thick is ignorant; and the man from whom it is entirely gone is all-knowing, omniscient. Like fire in a piece of flint, knowledge exists in the mind; suggestion is the friction which brings it out. All knowledge and all power are within. What we call powers , secrets of nature, and force are all within. All knowledge comes from the human soul. Man manifests knowledge, discovers it within himself, which is pre-existing, through eternity.”

“No one was ever really taught by another. Each of us has to teach himself. The external teacher offers only the suggestion which rouses the internal teacher to work to understand things. Then things will be made clearer to us by our own power of perception and thought, and we shall realize them in our own souls.” “ **Within man is all knowledge , and it requires only an awakening, and that much is the work of a teacher .**” End Quote

### 3.2.1 A KEY QUESTION FOR THINKERS ON EDUCATION

All existing programmes of the Government of India and indeed western education seek to make people literate as a minimum . Swami Vivekananda gives a totally new perspective and forces us to ask ourselves... “ **Who are we trying to make literate ?** ”

We, in fact need to approach the whole question of literacy with some humility. We need a correct our conceptual understanding of literacy and concentrate on the one factor within the education system ( **i.e. the teacher** ) who really matters and who has been at the centre of the whole process for thousands of years. In fact, conceptually we were **OK** until we tried to re-invent the wheel with schemes such as the Mid-day meal scheme which though conceived with perfectly good intentions has become a difficult proposition to manage from a logistics viewpoint as it has given way to leakages and corruption in the name of the children who are not getting the food that is meant for them. There is therefore a clear need for new thinking within the National Knowledge Commission , The Planning Commission and the government of India in general. Today , in the “ literacy centric “ model followed in India, the teacher is the **afterthought**. This approach very clearly needs to be changed in a major way as we have made a mistake at the basic concept level itself.

### 3.2.2 THE URGENT NEED FOR A SECULAR PROJECT PHILOSOPHY

Over the last few decades India has seen a large number of communal riots in which thousands have perished. This has happened because children in India are not taught about the essential oneness of all religions. Unless we expose children to ideas from all religions as a part of their school curriculum there will only be more killing in the name of religion.

The Education Megaproject therefore was looking for a philosophy that allowed extremely broad minded thinking ... and we found it.

Vivekananda spells out the projects secular core “ **Let the watchword be acceptance and not exclusion.** Not only toleration, for so called toleration is blasphemy. Toleration means that I think you are wrong and I am just allowing you to live. Is it not blasphemy to think that you and I are allowing others to live ? I accept all religions that were in the past and worship them all. I worship God with everyone of them, in whatever form they worship him”.

Vivekanand Continues ...

“ I shall go to the mosque of the Mohammedan ; I shall enter the Christian’s church and kneel before the crucifix. I shall enter the Buddhist temple where I shall take refuge in Buddha and in his law. I shall go into the forest and sit down in meditation with the Hindu, who is trying to see the light which enlightens the heart of everyone.

Not only shall I do all these things but I shall keep my heart open for all that may come in the future . **Is Gods book finished ?** Or is it still a continuous revelation going on. It is a marvellous book – these spiritual revelations of the world . The Bible , The Vedas , The Koran and all other sacred books are but so many pages and an infinite number of pages remain to be unfolded ”.

Government of India therefore needs to rethink its position on not allowing religion to be taught in schools . We need to expose our children to good thoughts from all religions.

Vivekanand's " Inclusive Philosophy for Education " has been adopted as the design basis for this project for its **extremely advanced and timeless** thoughts . The Project design basis document can be downloaded from [www.nataraja.org.in](http://www.nataraja.org.in)

We should never take the " Politically Practical" route when it comes to education because political practicality keeps getting degraded. Our ideals must always be the highest. Vivekanand very rightly says " That is the goal. We know we cannot reach it yet. Never mind. Do not despair, but do not drag the ideal down ".

### **3.3 PHASE II : BUILDING A NEW SYSTEM TARGETED AT A US \$ 4.5 TRILLION ECONOMY**

The Indian Primary & Secondary Education Megaproject is being introduced as a massive bridge between what we have today to serve 1.2 billion people ( which is woefully inadequate ) and what is needed tomorrow as the Indian economy expands.

The project has been designed by revisiting fundamental concepts that govern not just the way humans have learnt over thousands of years , but also the very nature of the human mind and the central role of the teacher in the whole process. What has emerged is a path breaking project which will serve as a benchmark for not just other education projects in India but for similar social initiatives around the world.

The Education Megaproject , in terms of its output will therefore , **far exceed** , any previous plan of the Govt. Of India , in terms of its effectiveness as regards the number of children taught how to read and write, and it will, in fact, go far beyond making them " just literate " at a cost ( To Govt Of India ) far lower than any previous or currently planned government scheme. . The following pages describe the major aspects of the project which has the potential of providing high quality education, totally free of cost for upto 126 million children depending on the extent to which its prescribed teacher sharing programme is implemented.

By focusing on the central role of the teacher in education, the project makes a significant conceptual departure from current government schemes such as the flagship Sarva Shiksha Abhiyan ( SSA ) which focuses on literacy and the Mid Day meal scheme which seeks to increase enrolment and attendance at school by offering free food. While the mid-day meal scheme is a very humane gesture and may help get the younger children ( Upto Std III ) to attend school, its efficacy beyond Std III is debatable. This project therefore provides the vital additional pull factor in the form of access to a good teacher from class IV onwards as the child really starts thinking and undergoes a major transformation between Stds IV and XII which are the most impressionable years.

Readers may please note that this project while making a strong case for a Teacher Centric education model, however **does not** seek a re-allocation of funds from the Sarva Shiksha Abhiyan ( SSA ) and its associated Mid Day Meals Scheme. Instead, it seeks to stabilize and greatly improve the system wide accountability of the SSA by providing a new information architecture ( as just discussed ) and local autonomy over the use of funds which is more suited to the needs of the local school and it achieves all this with minimum need for funds. It does however need full government administrative support and in a few cases the recovery of unspent money under allocations made in previous years.

Since funding is a big issue, one of the objectives within the project's design criteria has been to raise all the money required for building and operating the Education Megaproject

from outside the present budgetary resources of the Government of India. This was seen as critical to the success of the programme. Since the most important issue is financing, this will be dealt with first, followed by a discussion on the essential features of the project.

### 3.4 EDUCATION MEGAPROJECT FINANCING

Given the fact that the central government as well as most state governments are running fiscal deficits in excess of 4% – 5%, it does not appear realistic to expect any government (Central or State) to finance a large capex programme in education and other means must be found. This calls for financial innovation and the tapping into of hitherto untapped and new sources of funds and the creation of new financial and legal structures.

To arrive at an appropriate financing mix we have studied a number of options and numerous recommendations made by a number of experts both Indian and foreign. We were however not able to find large enough pools of finance in all the material we went through. The Nataraja Foundation therefore had to innovate and we started looking at all kinds of possibilities because without the money we did not have a project to talk about.

Finally we have been able to put together a list of possible financing options. For a proper understanding of the thinking behind this list we would like to direct our readers to **Annexure I** ( Sources of Finance and related assumptions ).

The proposed list of sources of finance for the Education Megaproject is as follows :

1. Expanded GST ... 10 % of delta additional receivables to be securitized
2. 30 % of a proposed new tax on the services component in future Infrastructure projects
3. A Graduate Tax payable by Employers In India
4. A Quantized Tobin Tax on Forex Transactions
5. Urban Equity Withdrawal from PSU Land at higher Floor Space Indexes (FSI's )
6. Yearly Rent From Re-developed PSU Land
7. Teacher / Content Outsourcing Business
8. Domestic Students on Fractional Vouchers / NRI Quota and SAARC / Foreign Students
9. Un-Utilized Funds with various Ministries and NGO's
10. Equity Infusion By Promoter groups for 25,500 Day Schools and 4500 Residential Schools
11. Committed and Un-Utilized Funds Lying with the World bank and the Asian Development Bank
12. Service Tax Feedback from a US \$ 45 Billion / year new education business due to the Megaproject
13. 1 % of India's Foreign Exchange Reserves ( Currently at US \$ 278 Billion ) ... **This is a backup source ... not active within Rev 03.**
14. Dis-investment proceeds from Public Sector and Bank privatizations ... **This is a backup source ... not active within Rev 03.**

The above sources have been combined within our new reference frame for the Indian economy circa 2025. We do not see a problem in mobilizing the vast sums involved as the financing scheme that we propose has been successfully employed in India previously for the construction of the Golden Quadrangle Project / National Highways projects. To mobilize the above resources and direct them towards executing the Education Megaproject, there is a need for Parliament to enact two special legislations to give birth to a legal structure consisting of :

1. A Statutory Organization “**The Indian Social Infrastructure Corporation ( ISIC )** ” which will function as the nodal agency for setting up large primary education and healthcare projects.
2. A statutory fund named “ **The Indian Education Megaproject Fund** ” as suggested by Dr. Urit Patel ( on the lines of the “Central Road Fund , which has previously helped to successfully finance large highway projects in India such as the Golden Quadrangle project ).

The above two elements of the financial and legal framework are critical to the fast track execution of the Megaproject. The construction phase financing is now discussed.

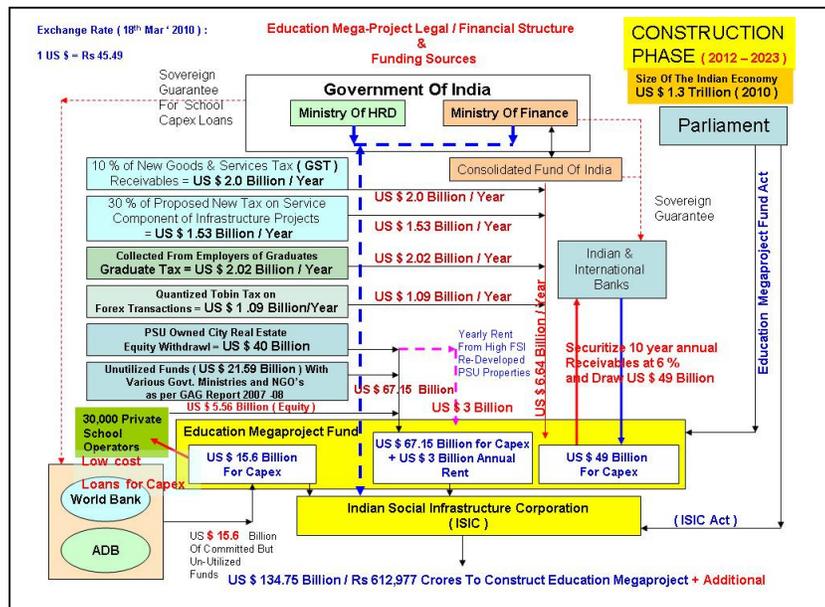
### 3.4.1 CONSTRUCTION PHASE FINANCING

The financing strategy for the construction phase of this project draws on ideas and experience gained in India while successfully financing huge highway projects like the “ **Golden Quadrangle** ” and the “ **North – South, East – West Corridor** ”. The basic concepts and structures that are being suggested for this have therefore already been tested and they have worked in the past. **The only difference is in the sources of finance, some of which are new.**

As has been stated earlier, the Education Megaproject is essentially a large and highly organized Capex Plan that will raise annual fixed asset investments in primary and secondary education by a factor of 5 – 6 times over even currently expanded levels and maintain that investment level for **10 years without a break**. This level is much higher than the “ **6 % of GDP on Education** ” promise that has been committed under the **XI<sup>th</sup>** plan but as we will presently demonstrate , this level of Capex is very much within our reach.

The construction phase of the Education Megaproject has a layered financial structure comprising of **8** different sources of finance ( from the list above ) which are brought in at different stages of the project in the course of its 11 year construction phase. The choice of financial sources has been dictated by a project design specification which required that no new requirements would be placed on the government’s limited budget. This has been achieved in the project design and the scheme essentially comes at minimum cost to Government of India as the financial structure for the project will be able to effortlessly raise the **US \$ 131.38 Billion** or **Rs 5,97,651 crores** for the programme’s capital expenditure as well as the yearly **US \$ 42.57 Billion** or **Rs 1,93,632.6 Crores** operating expenditure that will be needed once the entire system is commissioned in 2023.

**Fig 1 : Source of Funds ( Construction Phase )**



Three of the financing sources are totally new and the other five are more conventional. Four of the sources are yearly cash flows that will be securitized to raise nearly half the capital expenditure upfront while the other three are one time or phased bullet payments into the Education Megaproject Fund. Within the bullet payment pool, two are large already committed yet un-utilized funds which will be drawn down immediately on project commencement.

The financing sources are now described. The first four are yearly flows which are to be securitized.

1. **Securitizing 10 % of New Services Tax Receivables under Goods and Services Tax ( GST )** to raise a yearly cashflow of US \$ 2.0 Billion. This amount will be pooled with three other components under ( 2 ), ( 3 ) and ( 4 ) below and then the pooled cashflows will be securitised at a 6 % discount rate to raise US \$ 49 Billion from leading national and international banks to finance project capex.
2. **Securitizing 30 % of a proposed new 10.3 % tax on the services and labour component of Infrastructure projects.** This will be on the same lines of the 10.3 % tax on the service and labour component of housing and commercial projects that have been a part of the budget proposals in Mr. Pranab Mukherjee's Union Budget for 2010. Details of this financing element are available in Annexure I .
3. The Education Megaproject proposes to implement a suggestion made by NV Varghese in his paper , “ Reforming Education Financing – 1991, to raise up to US \$ 2 Billion each year through the **levy of a Graduate Tax**.

Very briefly the idea is that India today has only **46 Million Graduates** on whose education the Indian Government has spent a lot of money. Companies that employ these highly qualified people are getting assets for free and they generate huge profits. The Indian government is however getting nothing in return for it's huge investments in training these people. It is therefore proposed to levy a Graduate Tax @ 3 % linked to the graduate employees salary but payable by the employer. Details of this financing element are available in Annexure I.

4. **Levy of a 0.02 % Quantized Tobin Tax on Forex Transactions** by Indian owned companies & by foreign entities doing business in India to raise US \$ **1.08** Billion / year towards project operating expenditure.

This tax had first been suggested by the Nobel Laureate economist Prof. James Tobin to discourage short term speculation through round trip excursions into another currency. The money collected through this tax could then be used to finance social development projects.

On December 11, 2009, European Union leaders expressed broad support for the levy of this tax in a communique to the International Monetary Fund. This tax therefore has broadbased support around the world and in India we need such a tax which ensures that a very small percentage of the huge wealth generated through currency transactions is utilized for development and education in remote Indian villages. The Governor of the Indian Reserve Bank Dr. D Subbarao, had in **Dec' 2009** hinted at the possible need for policy measures , including **Tobin Tax** to control fund flows (**US \$ 17 Billion**) into the Indian economy.

The case for the imposition of a Tobin Tax is therefore definitely there. Taiwan, Brazil and Canada have experimented with this and India should follow. The Education

Megaproject is therefore offering itself as a user project for the \$ 1.08 Billion which will be collected each year at a minimum as **Tobin Tax**.

5. **School Operator Equity** : Private school operators under the terms of the BOT concession agreements will be bringing in 30 % of the 15 % of the cost of the school as their own equity. This amounts to just 4.5 % of the cost of the school. But taken for the US \$ 131.38 Billion project as a whole , promoter equity contribution over a 11 year construction period will add up to **US \$ 5.56 Billion**. Please note that this money will be brought in by 30,000 different operators over an 11 year period.
6. **“Urban Equity Withdrawal ” in State Owned Enterprises** : A total of US \$ 40 Billion is proposed to be raised towards project capex by applying the concept of differential floor space indexes ( FSI's ) to land owned by PSU's in the 4 Metros and large cities and towns across India. 10 % or 3000 acres of prime real estate of a total of 30,000 acres belonging to PSU's will have their FSI's raised from 2.33 to between 8 – 16. This 3000 acres in large Indian cities will be sold to large urban project developers both Indian and foreign and the money raised from the sale will be used to build schools in rural areas. The detailed procedure for this is described in the section “ Project Design and Execution Concepts In Detail “ . This “ Urban Equity Withdrawal “ gives effect to new thinking within the World Bank group on Unlocking land values in urban India ( World Bank PPIAF Policy paper No 7 , by George E Peterson ' 2009). **Details of this financing element are available in the next section.**
7. **Utilization of Unutilized World Bank & Asian Development Bank Funds** : The World Bank and the Asian Development Bank have together sanctioned a total of **US \$ 15.6 Billion** or Rs 70,964.4 crores for development projects in India but this money is lying unutilized with these two multilateral institutions as the government of India does not have any projects to utilize these low cost funds. During 2007 – 08 , The government paid a penalty of **Rs 124.54 Crores** as commitment charges on this massive un-drawn amount to the Multilateral agencies according to the Comptroller and Auditor General Of India ( CAG ) in it's March 31, 2008 report which was tabled in Parliament. **This is a huge wastage of low interest rate funds.**

The World Bank / Asian Development Bank provide funds for specific projects ( Healthcare, Water/Sanitation, Education, Rural Roads, Environmental projects etc ) and it is usually difficult to reallocate this money for other than their committed sectors. However , since the Education Megaproject is an integrated development project with sub projects in all these areas , the multilaterals would not have any problems in disbursing all the committed funds for a single large education project that includes all these areas. The most sensible thing to do would be to immediately deploy this massive corpus for the financing of the Education Megaproject which at US \$ 131.38 Billion will have an Infrastructure Investment Multiplier effect of nearly US \$ 300 Billion on the Indian Economy over the next 11 years.

8. **Utilization of budgeted and dispersed , yet Un-Utilized funds with various ministries** : Almost Rs 108,000 Crores or US \$ 21.59 Billion ( at Jan 2009 exchange rates ) is lying un-utilized with various ministries and NGO's. The CAG in its report for 2007 – 08 has said that un-utilized grants of Rs 100 Crores and above alone totalled Rs 59,000 Crores between the years 2005 – 06 and 2007 – 08. In 2007 – 08 , under 97 grants to civil ministries there was an unspent provision of Rs 108,000 crores. This money should have been returned to the consolidated Fund of India, but this was not done. **These are 2007 – 08 numbers but they are an indication of how much money is still lying un-utilized in key government departments handling social sector schemes in healthcare, education , rural development and food and public distribution.** A proper audit process will help make this money available.

The Education Megaproject is an integrated social development project as it subsumes within itself the work of several ministries of the government of India. It has a large education and culture component, a healthcare and sanitation component , a rural development & tribal welfare component, a village roads component , an environmental component ( worlds largest environmental project ) and even a large horticulture component. This entitles this project to be the single biggest recipient of these un-utilized funds.

It is to be noted that there are other possible sources of funds such as unused foreign exchange reserves ( currently at **US \$ 278 Billion** ) and future dis-investment proceeds from various public sector companies and banks which have not been considered in the financing. These can also be called upon if required. As of now, we do not believe that it will be necessary as the proposed financial structure raises enough cash.

Neither have we considered a possible bond issue of **US \$ 15 Billion** by the “ **Indian Social Infrastructure Corporation ( ISIC )**”, which could issue “ **India Education Megaproject Bonds** “ to foreign entities interested in taking an exposure to Indian paper at attractive coupon rates. Neither are we considering an equity issue of **US \$ 5 Billion** to domestic investors based on the **27,000 Acres** of prime real estate that the ISIC will own which will help make it amongst the most valuable public corporations on the Indian and indeed the global stock markets.

### **3.4.2 FINANCING PROJECT OPERATIONS**

This project has been conceptualized , keeping in mind , the human resource needs of a **US \$ 4.5 Trillion** economy in 2025. When we plan for that kind of scale we need to think in futuristic terms about “ possibilities “ , with the understanding that we will negotiate the problems we encounter, when we come to them. Let us not cloud our thinking with problems.

Secondly , we need to understand that of all capital expenditures on a sectoral basis, Capex incurred by a nation on education is least inflationary for the economy compared to all other possible avenues of investment. This is because education increases productivity and demand. All it demands, is for us to have a little more faith in ourselves as Indians. Right now , the Nataraja foundation is a “ **Majority Of One** “ in believing that this project is do-able. Just imagine what will be possible if we are joined by just a few other determined people.

The system of 30,000 new schools to be set up, together with it's network of 420,000 assisted existing schools ( through a teacher sharing programme ) will incur an operations expenditure of approximately **US \$ 42.57 Billion each year**.

The question is “ How do you raise so much money each year “ ? The schematic below shows how this money will be raised. The key thing to remember is that as the system grows , Indian GDP will also be increasing in a manner that will entirely support it and by the time the system is fully operational in 2025 , the size of the Indian economy will be **US \$ 4.5 Trillion**.

First , we will look at whether we can use some of the annuities that were used in the construction phase. These annuities were committed for 10 years to the investment banks and in 2023 they will once again be free cash flows which together will provide **US \$ 17.86 Billion** each year :

1. 10 % of GST receivables ...
2. 30 % of Tax on service components of Infrastructure projects

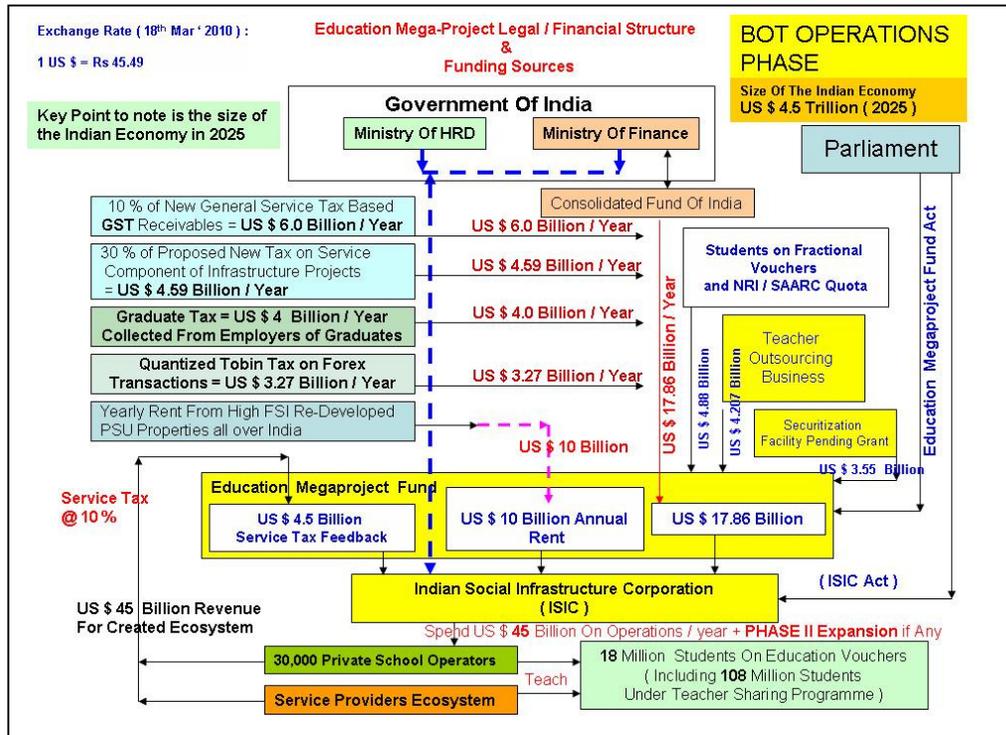
3. Graduate Tax payable by employers
4. Quantized Tobin Tax
5. Yearly rent from re-developed PSU properties in partnership with leading Real estate developers

Secondly , three new revenue streams will come in to add another **US \$ 13.59 Billion** to the cashflow . These revenue streams are :

6. Indian Students on fractional vouchers and NRI / SAARC children quota
7. Teacher / Content outsourcing business
8. 10 % service tax feedback from newly created service provider ecosystem

Thirdly , a balancing number of **US \$ 3.55 Billion** will be provided by the government of India which will now have a budget ( in 2025 ) that is three times larger. It is not such a large number for a larger economy.

**Fig 2 : Source of Funds ( Operations Phase )**



The first four of the above sources need not be explained in detail as they have been explained before . The only thing to remember while examining “ operations phase financing “ is the size of the Indian economy in **2025** wherein the collections would have tripled. The number of graduates would also have increased considerably in India pursuant to the implementation of reforms packages currently being considered by the government in higher education and the number of foreign universities that will set up shop in India by 2022.

Items 5 – 8 above need to be explained and we will do so now :

**Item 5 : Rent from former PSU properties ...** Readers may recollect that only 3000 acres out of the 30,000 Acres of land bank would have been sold during the construction phase to raise US \$ 40 Billion to part finance the construction of the schools.

It is envisaged that the Indian Social Infrastructure Corporation ( ISIC ) will serve as the cornerstone of an Indian urban equity withdrawal programme that will move wealth from large Indian cities to the rural countryside in a very coordinated manner.

Under the proposed operations financing plan, It is envisaged that the **ISIC** will enter into a 50 :50 partnership with leading real estate companies and project developers from India and around the world. The ISIC will provide the land and the developer will develop financial centres, commercial and premium residential space in large Indian metros and large towns. A total of **10,000** acres of real estate will be developed at FSI's ranging from 8 – 16 to provide a yearly annuity of **US \$ 10 Billion**, each year to the ISIC for a period of 25 years. The exact terms of the contracts with large developers will be decided by the ISIC after incorporation when it will have its own staff as described later in this document.

Another 17,000 Acres of land will be set aside for a separate and massive Rural Healthcare project which will be built by the ISIC under a separate SPV. This project is currently under development and will be sent to the planning commission and the ministry of health and family welfare later in 2010.

Given rapid urbanization, India currently needs another **200 New Green Towns** with a capacity to house one million people each. Given the experience gained in Urban Equity withdrawal and large scale property development within this project it is envisaged that the ISIC will be given additional government land to set up these towns in collaboration with the worlds leading developers. This will provide additional revenue and add to the valuation of the ISIC on stock exchanges around the world after it goes public in India.

**Item 6 : Students on fractional vouchers and NRI / SAARC children quota ...** The education megaproject is focused on economically weaker sections of our society and 70 % of the strength of the schools will come from economically weaker sections.

This however does not mean that the upper middle class and the rich cannot get admission to the excellent schools that will be set up. As mentioned later in this note , even children from the better off sections of society will enjoy a subsidized education but they will have to pay 1/ 3<sup>rd</sup> of the fees at a minimum. Since the vouchers will be worth Rs 101,400 for day schools and Rs 129,500 for residential schools , the more economically well off will be required to pay 1/3<sup>rd</sup> of this amount. In addition SAARC students will be admitted at the full fee and NRI's foreign students will need to pay double the value of a voucher and still it will be cheaper than studying in a private school in the United States for example. The NRI / SAARC quote however will be just **3 %** . A majority of the **US \$ 4.31 Billion** that is budgeted for , will come from Indian students on fractional vouchers and we do not see any problem with demand at the yearly fees mentioned above, for day schools or for residential schools.

**Item 7 : Teacher Outsourcing Business ...** Currently teachers in India function in a highly restrictive environment. They have a considerable amount of free time but they are not able to utilize this free time properly and grow in their careers. Instead they are forced by the government to take on duties like election monitoring and taking of the census.

The Nataraja Foundation looks at teachers as highly productive and creative people. We do not wish teachers to feel that they are stuck in dead end jobs and therefore we seek a structure that allows for the development of primary and secondary school teachers to the full extent that is humanly possible.

All the **1.74 Million teachers** within the Education Megaproject will be on a 5 year renewable contract. This contract however will be highly flexible and will allow for the establishment of teacher working groups where teachers will be able to be entrepreneur professionals. Specifically it will allow them to :

1. Produce creative teaching content for the global markets by entering into business arrangements with schools in foreign countries and within India. The education megaproject will provide all the infrastructure, software and communication needs to facilitate this. The only condition being that teacher groups will need to share their earnings with the ISIC in the ration 60 : 40 with 60 % of the revenue going to teachers.
2. There will also be a provision under which teachers will be allowed to go on teacher exchange programmes to foreign countries where huge shortages in trained teachers exist. In a school with 300 students X 2 shifts and 58 teachers , it is envisaged that up to **5** teachers at any given point in time will be on a foreign assignment.

These two programmes will greatly help to attract the best people to careers in teaching and at the same time allow for considerable growth of teachers as professionals. Teachers will also earn a lot more than they are earning today. In the above it is being assumed that each teacher has the potential to earn an additional Rs 5,50,000 in the aggregate each year. It is estimated that the teacher outsourcing business will add close to **US \$ 4.207 billion** each year as a funding source for the project considering a **40 %** share of revenues to the ISIC.

**Item 8 : A 10 % service tax feedback ...** The huge primary and secondary school network that is proposed to be set up will be creating an ecosystem where **US \$ 42.57 – 45 Billion** will be transacted each year at a minimum.

**Thousands of information and learning content providers and service companies will be created to serve millions of children in India and around the world.** All this means more tax to the government of India. If service tax is levied at the rate of 10 % , it will imply a feedback of **US \$ 4.25 - 4.5 Billion** to government coffers. We have taken this money in as a feedback to re-finance the project's operations.

After accounting for all the above inflows , we still are falling short of US \$ 3.55 Billion. This we have currently designated as a grant which govt of India will need to provide. We do not see a problem with this as the Indian economy would have grown considerably by 2025 and government of India will be in a position to easily provide the funds without any financial impact on it's other schemes.

There is a need to make a small point about operations expenditures here. **In the operations phase the schools will operate very differently on the expenditure side from the current system under which the Sarva Shiksha Abhiyan ( SSA ) operates.** Under the megaproject, schools will be completely free to outsource provision of goods and services and a lot of the expenditure they will incur will be paid to private vendors. While school operators will have considerable autonomy in spending money , they will be required under the terms of the concession documents to publish a yearly report on budgets plans and actual expenditure incurred on the context based communication system's open database platform. This will have two very important effects :

1. It will help compare the financial and procurement performance of the 30,000 schools on various parameters ... thereby serving as a natural check on funds leakage attempted by un-scrupulous operators who have been able to get past the strict eligibility criteria for winning bids to run schools. If an operator deviates by more

than **7 – 10 %** from the global average's within the programme, the system will trigger a show cause notice to the operator and connected NGO's.

2. Since the amount received from the ISIC under the educational voucher system is fixed and **not cost plus** , it will encourage innovation in procurement of goods and services and introduce competition between vendors supplying to the schools ... all of which will greatly reduce costs, check corruption and increase economic efficiency.

### **3.5 THE 18 MILLION EDUCATION VOUCHER SYSTEM**

The education Megaproject will run on a large and sophisticated education voucher programme which is innovative in application and based on global best practices.

A total of **18 Million Educational Vouchers** will be distributed to the economically weaker sections of society ( This **WILL NOT** be a caste based distribution but will be targeted at the poorest citizens of India and **70 %** of the vouchers will be distributed in Rural areas ) where between **70 % - 80 %** of the 30,000 schools will be built.

Students from all over India between Standards IV and X will be eligible to take a yearly simple aptitude test (This will not be an exam to test proficiency or Knowledge ) as the idea is to test basic aptitude and to **Include the Excluded** among our children. The score on this aptitude test will be combined / multiplied with an **inverse metric** of the educational history of the child to yield a total score. This inclusion of an **inverse metric** will ensure that only the most needy children will win the Educational Vouchers ... thereby promoting social and economic justice to all irrespective of cast , creed and religion.

The Educational Vouchers will be structurally designed to be a promissory note from the Indian Social Infrastructure Corporation ( **ISIC** ) to the Schools. No child or his / her parents will receive any money. After the child passes the aptitude test and wins a voucher, the child's parents will have a right to decide where their son / daughter will study. The Voucher will therefore be transferable between schools but not between students.

A more detailed description of the commercial / operations issues with regards to the educational vouchers system within the megaproject are discussed within the detailed description part of this note. The vouchers are very interesting as they are the means to creating a much more inclusive society in India.

### **3.6 SYSTEM OPTIMIZATION THROUGH TEACHER SHARING**

One of the primary objectives of this project is to assist the existing school system where the teacher – student ratios are at an unacceptably high **1/60** level in most states. The assistance programme will enable the existing schools to have access to the best possible education at the lowest possible cost on a per student basis.

We have found that the best possible way to do this is by sharing high quality teaching resources ( teachers and educational content ) between the 30,000 New hub schools and 420,000 existing small town / village schools all across India. It is envisaged under this plan that each of the 30,000 new schools will share it's teachers with 14 other schools and to achieve this the schools are being overstaffed by design. Adequate fuel and conveyance is also being provided ( 2 Large buses, 2 mini buses , 4 jeeps and 4 small cars ) in each school. These resources will be provided both in the case of day schools and residential schools. It is also being assumed that each vehicle will cover around 75 Km per day . A

needs study will however be conducted to check whether it would be cheaper to outsource this conveyance function or to provide the schools with vehicles. Schools will also be required to publish all their data on costs to the Megaproject's database and on the context based communications platform so it will be quite easy to check if a particular schools is deviating from the programme. A large number of NGO's will also be monitoring these expenditures and we can expect leakage and unexplained deviations from norms to remain within a tight band. The BOT documents governing the schools concession will have a specific clause that all cost data will be published by the operator so the system becomes self regulating as it will be very easy to compare cost numbers for the same activity between schools. If any school deviates in **teacher sharing coverage** or in costs associated with this activity the system will generate an alert for NGO action. NGO's will be paid a fee for monitoring the teacher sharing programme in various parts of the country.

Today teacher absenteeism is a major problem in India as teachers do not attend school for 25 % of the working year. One of the main benefits of the teacher sharing programme under the megaproject is that it will reduce teacher absenteeism to near zero levels. If teachers in assisted schools are found absent from their schools for extended periods of time , this will be reported to the system by the visiting teachers and the system will generate alerts which could lead to termination of service in the case of the offending teachers in village / small town schools.

### **3.7 STATE GOVERNMENT ACTION ITEMS**

Land is a state subject and education is on the concurrent list of the constitution. State governments will therefore have the responsibility to provide land for the **1000 +** new schools to be set up in their respective states under the Education Megaproject.

#### State Government Action Items :

1. Provide upto 30 Acres of Land ( minimum ) for each school. Land will be required for Classrooms, Teachers housing as well as for Playgrounds. The focus states of **Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Andhra Pradesh and West Bengal** will each be getting in excess of **1000** schools. Each of these states will therefore be providing 30,000 Acres for the Education Megaproject. **Uttar Pradesh will be a Maximum priority state** for Phase I of the project as it has been found that in UP there are **39,000** villages without any kind of basic school facilities( Mehrotra 2006 ).
2. State governments will also provide all clearances and educational affiliations for all school projects within their borders.
3. **School Siting** : It is very important that schools are located very close to the target segments of the population. This is especially the case with primary schools.

The main takeaway from a National Sample Survey Organization ( NSSO ) study in 1995 – 96 and a UNICEF study in 1999 is that girls and in particular SC and ST girls are being left behind and the main reason for this has been that schools are located far away from where they stay. In addition it has been found that even where villages had schools , SC and ST students were in many cases ( this is the 21<sup>st</sup> century ) not allowed by the higher castes to attend the village school.

The Education Megaproject therefore has the following guidelines on school siting / location :

- In most cases in villages having an SC / ST population , the schools should preferably be located in the SC / ST areas. This will ensure that the higher

castes cannot prevent the children of SC / ST's from attending schools and since the schools will be of excellent quality , the higher castes will finally overcome their reluctance and send their own children to schools in SC / ST areas. Over time , people will mix with each other.

- In towns / villages having more of a muslim population it will be preferable to locate the schools in Muslim areas. This will create a major opportunity for Muslim girls to go to school. If schools are located in Muslim areas , **50 %** of the seats should be reserved for girls. If necessary build more schools in such places so that everyone is accommodated. There is enough money for this within the financial structure.

### 3.8 SUPPORT REQUIRED FROM THE GOVERNMENT OF INDIA

The following support is required from the Government of India to make this project a reality:

1. A Statutory Organization “**The Indian Social Infrastructure Corporation ( ISIC )** “ will need to be created under an act of Parliament. The legal status of this organization and It's financial structure / means of financing are made available for free download on ([www.nataraja.org.in](http://www.nataraja.org.in)) with the caption “Legal and Financial Structure “..
2. A statutory fund named “**The Indian Education Megaproject Fund** “ will need to be created under an Act of Parliament. This fund will be on the lines of the “Central Road Fund “ , which has been created to build the Golden Quadrangle Project. The passage of “**The Education Megaproject Fund Act** “ as suggested by Dr. Ujjit Patel , is critical to put this project into execution mode.
3. Clear all roadblocks for the re-allocation of prime real estate lying un-utilized with various PSU's and Government Departments in metro's and large cities and towns.

This will result in planned development of hundreds of thousands of acres of land in our cities under the aegis of a single organization and also yield far bigger financial returns to the PSU's / Government departments participating in the scheme that raises FSI's on land owned by PSU's ( complete details of this plan and how it is to be executed is available in the section “ Project design and execution concepts in detail “ ).

4. A **new tax proposal** on the lines of the recently implemented tax, on the services component of housing projects (2010 Budget) will need to be implemented **to extend service tax to the labour and services component of Infrastructure projects.** This will very easily generate a new cash source for creating the human resources necessary to plan and build large Infrastructure projects in India. At present, there is a shortage of **30** million trained people in the construction Industry alone. So the imposition of a service tax on the labour / skill component of Infrastructure projects is fully justified.
5. To enable fast track execution of this project, Government needs to initiate a total of **70** pilot projects across 28 states and 7 Union Territories. Each pilot project will include, besides a school for 600 students ( **design capacity of 300 students and operating in 2 Shifts** ) , a large rural teachers training facility to train 300 teachers each year as well as a training facility to train 300 masons in Vernacular / Low cost / sustainable architecture. Each of the 70 pilot projects will require between 150 – 200 Acres of land for this activity.
6. An initial corpus needs to be set aside, to set up the **70** pilot projects including the model schools, teachers training institutes and Masons training institutes. All this initial money that the government spends upfront will be returned by the “The Indian Social

Infrastructure Corporation” within 2 – 3 years with interest calculated at 12 %. The rest of the project (balance 30,000 schools) will be built without any further demands on conventional means of financing .

### 3.9 THE 25 PROJECT DESIGN CRITERIA

**The problems within the education system in India cannot be solved at the same level of thinking which has created them.**

A need was therefore felt for innovation at the project concept level itself. With this in mind we decided to list the significant project design criteria and then incorporate these criteria in the design.

After considering various practical issues and separately examining the recommendations of the National Knowledge Commission and several independent experts in the field of education in India, we have listed the design criteria on which the Primary & Secondary Education Megaproject is based.

There are 25 criteria which have gone into the design of this project. They are therefore extremely important because the choice of the criteria has directly affected our recommendations on important subjects such as the choice of a **design basis philosophy which is the most important part of this project** for instance as there could be no compromise on the secular fabric of the project . The philosophy therefore had to be something that would be so solid and assimilative that it would cover all religions and cultures within India and allow them to flourish while holding a torch to the rest of the world. In all our reading ( Gandhi, Tagore, Abraham Lincoln, Anne Besant, Sister Nivedita and more recently Dr. Abdul Kalam ) we found Vivekananda’s Philosophy of education and his ideas to be the most suited and the most powerful of all. In fact on a global basis , no thinker around the world even comes close to Vivekanand. There was therefore no contest when we adopted Vivekanand’s ideas on education as the central theme and design basis of this project. In fact , India would not be in the mess she is in today if our education planners had the sense to listen to Vivekananda right in the beginning. For instance , India’s very approach to “ **literacy** “ is totally wrong, it lacks humility and a basic understanding of the human mind. Only Vivekanand has been able to explain the concept so lucidly.

The other **24** design criteria have taken note of the various problems within education in the country. They have also fundamentally affected the design of various facets of the project.

These project choices are as follows :

- Institutional structure
- Teacher centricity
- The 18 million education voucher system
- The teacher sharing programme
- Financial structure
- Huge budgets for Sanskrit, Hindi, Urdu and regional languages
- Community ownership of schools
- Information Architecture
- Teacher benefits
- The homeland security / elementary military training programme
- Contractual framework for teachers
- Project size
- The PPP framework
- The one page rulebook
- No insistence on school uniforms

- Environmentally friendly architecture and construction technologies for school buildings

This executive summary has provided an outline of a large project. A lot of details however remain embedded in the detailed description which follows, the annexures to the project plan as well as within the excel spreadsheet which goes into all the numbers and the assumptions made in the financial design.

The Education Megaproject, described in the following pages, is focused on providing a sound basic education as it is more important to have a sound education at the primary and secondary levels for a majority of our people than to spend billions of dollars on higher education and have most of those students going abroad. The project, as designed, and in its current form, delivers on all major recommendations made by the National Knowledge Commission in its **3<sup>rd</sup> February ' 2008** report to the Govt. Of India in the matter of School Education.

Further ...

The benefits of the project are not confined to the children going to school but on society and the economy as a whole. Just the construction phase of the project for example is expected to generate a Infrastructure Investment Multiplier effect of **US \$ 300 Billion** within the economy. The contribution of the Education Megaproject will not be restricted to economic returns only. It will have a significant effect on reduction of poverty, improvement on income distribution, improvement in health and the nutritional status of the population.

The execution of the Education Megaproject will have a negative relationship to fertility and population growth and positive association with family planning methods , and it's positive relationship with general social, political and economic development and overall quality of life make this **the most desirable of projects to be put into execution mode.** Let us therefore hasten to execute this project which has the potential to once again bring back the golden age in India.



Project Visualizer  
The Nataraja Foundation  
[www.nataraja.org.in](http://www.nataraja.org.in)

" Determine that a thing can and shall be done, and then, we will ... find a way " – Abraham Lincoln

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## **PROJECT DESIGN & EXECUTION CONCEPTS**

### **IN DETAIL**

**This section goes into the 25 different project design parameters based on which the Megaproject has been conceptualized and designed.**

**The Financing plan which raises the US \$ 131.38 Billion Capex and the US \$ 42.57 yearly operations expenditure is discussed in detail.**

**Also explained in detail is the Urban Equity Withdrawal scheme involving PSU Real Estate in Metros and large cities to raise US \$ 40 Billion .**

**A number of other facets of the project and the thinking behind their inclusion is also discussed in detail.**

## 4.0 PROJECT DESIGN AND EXECUTION CONCEPTS IN DETAIL

### 4.1 PROJECT SCALE :

India has not had any serious capital investment projects in education for the last 30 years. Primary and Secondary education has suffered seriously and this has created massive quality problems in human resources in the country.

This project therefore seeks to build a total of **30,000 New schools** ( with capacities ranging from 300 to 600 students per school ) under the Public Private Partnership ( PPP ) format during the period **2012 - 2023**. The schools will be constructed across India in 28 States and 7 Union Territories. Phase I of the project will focus on six states that account for 3/4<sup>th</sup> of the out of school children and the largest number of school dropouts. Accordingly the states of Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Andhra Pradesh and West Bengal will be covered in phase I.

Each school under the programme will share teaching resources ( Teachers , Teaching aids etc ) with **14** other village schools in it's surrounding area so that a total of **420,000** additional / existing schools will be covered under the programme by 2023. The Nataraja Foundation believes that given the latent demand and the current supply side shortages, the market in India will be able to easily absorb this large project :

Phase	Number of Hub Schools	Number Of Assisted Schools ( Teacher Sharing Programme )	Commissioning Schedule
Bootstrap I	-	-	Q1- Q4 2011
Bootstrap II	-	-	Q1- Q4 2012
Phase I	<b>6000</b> Hub Schools	<b>84,000</b>	<b>2012 – 2014</b>
Phase II	<b>9000</b> Hub Schools	<b>220,000</b>	<b>2015 – 2017</b>
Phase III	<b>15000</b> Hub Schools	<b>420,000</b>	<b>2018 – 2023</b>
<b>Phase IV</b>	Possible repeat of total project ( another 30,000 schools ) to cover 4,20,000 additional schools		<b>2023 – 2029</b>
<b>30,000 New Schools to be commissioned by 2023</b>			
<b>Notes :</b>			
1. Each Of Bootstrapping stages I & II will consist of <b>250</b> Teacher Training Institutes to train <b>300</b> teachers each per year + <b>60</b> Centers of Vernacular Architecture to train <b>300</b> Master Masons each year. <b>Bootstrap II</b> will be a repeat of <b>Bootstrap I</b>			
2. It is not possible to execute Phase I of this project faster as India currently does not have enough trained teachers who possess the necessary capability / sensitivity to train young minds. This problem will be overcome by <b>2016</b> after which project execution velocity will pick up.			
3. <u>Phase IV could essentially be a repeat order which will repeat phases I, II and III in half the time.</u> It will be possible to dramatically crash commissioning schedules due to retained learning within the project enterprise.			
4. Each day school will operate in <b>two shifts</b> to maximize coverage while keeping costs low.			



The purpose of including the above excerpts from the CAG report is mainly to urge the government to look seriously at the current proposal ( **Education Megaproject** ) as it is **far simpler to implement** due to its self regulating nature. Secondly the Phase I implementation of the project's Information system ,which operates in real time, allows teachers in the most remote schools to get information on government grants and schemes within 2- 3 days instead of months. It will also inform teachers and NGO's how funds are being utilized and where decisions are being held up. In this manner the project's next generation information system will vastly improve the way education services are offered in India.

This project takes note of the constraints that the government has to deal with and therefore while pointing out the shortcomings in the current system, only seeks to improve it. The approach employed therefore has been to work around the existing system and to deliver results by going in for alternative financing to create a proper " Teacher Centric System " which will serve hundreds of thousands of already existing " literacy based schools " by means of an innovative teacher sharing programme which will deliver high quality education to an additional 420,000 existing schools at the lowest possible cost.

#### 4.3 NEED TO RECTIFY THE SSA'S WEAKNESSES

**The SSA's main problem is that it deploys too much government and red tape where little is required.** We should not therefore be surprised when " The Annual Survey of Education Report ( **ASER** ) tells us that even 8 years after the SSA was launched ( in 2001 ) , about half of India's children at the age of 5 cannot read simple text.

One of the SSA's greatest weaknesses is that there is no transparency in the system and its rule based procedures are too rigid and norm based. There is also no accountability and predictability in fund flows to the schools due to procedural delays within the central and state governments. This lack of clarity regarding funds availability greatly disrupts teaching activities in the schools as nothing can be planned with certainty. The most recent ( i.e Jan 2010 ) ASER report has in fact stated that of the schools surveyed, **50 %** reported not receiving SSA funds. Even in the financial year 2008 – 09 , we are told that **63 %** of SSA funds were spent in the second half of the financial year.

There is also a mismatch between the needs of schools and the funds received. For instance , a school with 600 students receives just two and a half times more money than a school with just 100 students. This is because of the rigid norms that the SSA has which totally prevent any kind of flexibility that would cater to the specific needs of the schools at the local level.

ASER data further reveals that because of the lack of transparency in the system and layers of red tape , in many schools, even the headmaster is not aware of the different grant components , when they will arrive or what they can and cannot be spent on.

The **Phase I** , Information architecture within the Education Megaproject has therefore been **specifically designed** with the objective of greatly simplifying the whole process of funds transfer from the ministry of HRD to the individual schools and the predictability of receipt of the funds within each calendar year. The systems approach employed within the project will enable all system participants to transparently view their entitlements at the individual school level and at the centralized funds flow monitoring level. The system will also allow a drill down to the individual schools level and will also generate an alert if any decision gets held up for a period of more than 1 week .

The project therefore is clearly a generation ahead of any other competing education project on a global basis as regards it's IT enabled infrastructure.

#### 4.4 PHASE I : IMPROVING THE EXISTING SYSTEM

The Nataraja Foundation believes that we must first do what Theodore Roosevelt believed in and practiced “ **Do what you can , with what you have , where you are** “. We must therefore first improve efficiencies within the current SSA and its associated Mid Day Meal Scheme.

Currently the SSA system has serious execution and operational issues with respect to not just fund flows and their timing but also in the leakage that is taking place. To enable a transition, it is hereby proposed to radically change the SSA's information architecture and associated information flows. **This can be achieved in 18 – 24 months to secure the first quick wins.**

The Sarva Shiksha Abhiyan's ( SSA's ) greatest weaknesses is that the opaqueness within the system makes it very difficult to find out where decisions are being held up. There is therefore no predictability in fund flows to the schools due to procedural delays within the central and state governments. In practical terms this means that once orders are issued and funds are sanctioned at the ministry level , there is no proper system to find out who is delaying things down the chain and why.

Today though there is a lot of information available within the system , the information architecture that is currently deployed does not allow the system to operate in real time for it to be of much use.

For instance the following link ( below ) takes us to a small village school in Betauli village, in the Jehanabad district in Bihar. There is a lot of data on this link about this village school dated Sept 2008 ... but this data **totally useless** for operational purposes.

<http://www.schoolreportcards.in/seeschoolreportdetail09.asp?cmbschool=10330300201&cmbstate=10&cmbdistrict=1033>

To make the whole thing work efficiently , we need a different , yet low cost architecture while allows us to save thousands of crores through better operational efficiencies , by making the assets sweat and by making every rupee count and by preventing leakage and fraud that are commonplace today ( please refer extracts from CAG report Exhibits 1- 4 in the detailed project description ) .

To avoid the problems stated above, the nataraja foundation suggests the adoption of a low cost , next generation , advanced IT platform which will make people and their transactions totally transparent. The system will create **dynamic, real-time digital dashboards** with drill down capability combined with contextual alerts to identify potential and actual sources of problems within the system in real time. Using this technology and it's sophisticated protocols it will be possible to drill down from the national level to the state level to the district / taluka level and even to the level of the individual school. **Therefore if someone within the system is holding up decisions, his / her name will be flashed as an alert, both to his / her superiors as well as to the affected schools and to all the associated NGO's,** thereby making the whole system extremely transparent and making it next to impossible for anyone to drag decisions.

Also when funds are released by the ministry of HRD or the concerned state government, the headmaster of each school ( based on a school budget code number ) , will receive an alert through a simple internet connection at the nearest town / village or SMS facility on his mobile phone. The alert will inform her / him when funds for his school have been released and it will also clearly state what the grant component can be spent on. This will cut down the waiting time from a couple of months and endless visits to the district or state headquarters to a few minutes if everything is online. Even if we account for a few delays in govt. offices , we can still cut cycle time to 2- 3 days. **We have the technology to achieve this today at a cost which is a fraction of what we might imagine.** Government of India can contact any good technology vendor to get a quote for the installation of such a system wide information architecture. A detailed note on the various features of the Education Megaproject's information architecture is a part of this concept document as Annexure 3.

If NGO's also get involved with this in a supportive role , it will cut system leakage and fraud to near zero levels.

#### 4.4.1 **SYSTEM OPTIMIZATION THROUGH TEACHER SHARING ... KEEPING TEACHER ABSENTEEISM IN CHECK**

One of the primary objectives of this project is to assist the existing school system where the teacher – student ratios are at an unacceptably high **1/60** level in most states and bring “ learning “ and actual knowledge transfer to world class levels at the lowest possible cost on a per student basis. In this regard the latest government plan, announced on the 1<sup>st</sup> of April 2010 by the Prime Minister Dr. Manmohan Singh ( **A school every kilometre** ) , may not be the best way to approach the problem as it stretches the system too thinly .

The Nataraja Foundation believes that the best way to do achieve coverage is by sharing high quality teaching resources ( Teachers and educational content ) between the **30,000 New hub schools** and **420,000** existing small town and village schools all across India in three phases and then to extend that system to cover even more schools.

It is envisaged under this plan that each of the 30,000 new schools will share it's teachers with **14** other schools and to achieve this the schools will be overstaffed by design. Adequate fuel and conveyance is also being provided to each hub school ( 2 Large buses, 2 mini buses , 4 jeeps and 4 small cars ) and these resources will be provided to teachers both in the case of day schools and residential schools. It is also being assumed that each vehicle will cover around 75 Km per day . A needs study will be conducted to check whether it would be cheaper to outsource this conveyance function and schools will be duly audited. Schools will also be required to publish all their cost and performance data to the Megaprojects database which will float on a context based communications platform.

It will then be quite easy to check if a particular school is deviating from the programme. A large number of NGO's will also be monitoring these expenditures and we can expect leakage and unexplained deviations from norms to remain within a tight band because of the transparency associated with the system. The BOT documents governing the school concessions will have a specific clause that all cost data will be published by the operator. This will ensure that the system becomes self regulating as it will be very easy to compare cost numbers for the same activity between schools. If any school deviates in **teacher sharing coverage** or in costs associated with this activity, the system will generate an alert for NGO action. NGO's will be paid a fee for monitoring the teacher sharing programme in various parts of the country. The costs associated with this monitoring programme will be a fraction of the losses and leakages that are happening at present.

Today teacher absenteeism is a major problem in India. One of the main benefits of the teacher sharing programme under the megaproject is that it will reduce teacher absenteeism to near zero levels. If teachers in assisted schools are found absent from their schools for extended periods of time, this will be reported to the system by the visiting teachers and the system will then initiate a process which could lead to termination of service in the case of the offending teachers in village / small town schools if they do not mend their ways.

#### 4.5 PROJECT PHILOSOPHY

A very serious conceptual flaw lies un-noticed in the current Govt. Of India understanding of the concept of literacy and education. In fact this flaw is within all western education systems. India , in **blindly copying** the west has forgotten it's own very sophisticated concepts about the learning process.

Swami Vivekanand has clarified these concepts very clearly and his words have become the guiding principles on which this Education Megaproject is based. To clarify the concepts and correct our national approach to literacy and learning it is perhaps best to quote Vivekanand directly.

#### **Vivekanand Proclaims**

**“ Education is the manifestation of the perfection already in man.”**

“ Knowledge is inherent in man, no knowledge comes from outside; it is all inside. What we say a man ‘ knows ’, should in strict psychological language , be what he ‘ discovers ’ or ‘ unveils ’. What a man ‘ learns ’ is really what he ‘ discovers ’ by taking the cover off his own soul, which is a mine of infinite knowledge. We say Newton discovered gravitation. Was it sitting anywhere in a corner waiting for him ? It was in his own mind; the time came and he found it out. All knowledge that the world has ever received comes from the mind; the infinite library of the universe is in your own mind. The external world is simply the suggestion, the occasion , which sets you to study your own mind. The falling of an apple gave the suggestion to Newton , and he studied his own mind. He rearranged all the previous links of thought in his mind and discovered a new link among them, which we call the law of gravitation. It was not in the apple nor in anything in the centre of the earth.”

**“ All Knowledge Is Within ”**

“All knowledge therefore,secular or spiritual, is in the human mind. In many cases it is not discovered , but remains covered, and when the covering is being slowly taken off, we say ‘ we are learning ’ , and the advance of knowledge is made by the advance of this process of un-covering . The man from whom this veil is being lifted is the more knowing man; the man upon whom it lies thick is ignorant; and the man from whom it is entirely gone is all-knowing, omniscient. Like fire in a piece of flint, knowledge exists in the mind; suggestion is the friction which brings it out. All knowledge and all power are within. What we call powers , secrets of nature, and force are all within. All knowledge comes from the human soul. Man manifests knowledge, discovers it within himself, which is pre-existing, through eternity.”

“No one was ever really taught by another. Each of us has to teach himself. The external teacher offers only the suggestion which rouses the internal teacher to work to understand things. Then things will be made clearer to us by our own power of perception and thought, and we shall realize them in our own souls.”

“ Within man is all knowledge , and it requires only an awakening, and that much is the work of a teacher .” End Quote

#### 4.5.1 A KEY QUESTION FOR THINKERS ON EDUCATION

All existing programmes of the Government of India and indeed western education seek to make people literate as a minimum . Swami Vivekananda gives a totally new perspective and forces us to ask ourselves... “ **Who are we trying to make literate ?** ”

We, in fact need to approach the whole question of literacy with some humility by factoring in human divinity. We need to correct our conceptual understanding of literacy and concentrate on the one factor within the education system ( i.e. the teacher ) who really matters and who has been at the centre of the whole process for thousands of years. In fact, conceptually we were **OK** until we tried to re-invent the wheel with schemes such as the Mid-day meal scheme which though conceived with perfectly good intentions has become a difficult proposition to manage from a logistics viewpoint as it has given way to leakages and corruption in the name of the children who are not getting the food that is meant for them. There is therefore a clear need for new thinking within the National Knowledge Commission , The Planning Commission and the government of India in general. Today , in the “ literacy centric “ model followed in India, the teacher is the afterthought. This approach very clearly needs to be changed in a major way as we have made a mistake at the basic concept level itself.

#### 4.5.2 THE URGENT NEED FOR A SECULAR PROJECT PHILOSOPHY

A project of this size and scale will be a dead and soul-less agglomeration of buildings and computer networks without a sound philosophy which is timeless and which seeks to bind people of diverse faiths and lead them towards the realization of their potential as human beings .

Over the last few decades India has seen a large number of communal riots in which thousands have perished. This has happened because children in India are not taught about the essential oneness of all religions. Unless we expose children to ideas from all religions as a part of their school curriculum there will only be more killing in the name of religion. The project therefore was looking for a philosophy that allowed extremely broad minded thinking ... and we found it.

Vivekananda spells out the projects secular core “ **Let the watchword be acceptance and not exclusion.** Not only toleration, for so called toleration is blasphemy. Toleration means that I think you are wrong and I am just allowing you to live. Is it not blasphemy to think that you and I are allowing others to live ? I accept all religions that were in the past and worship them all. I worship God with everyone of them, in whatever form they worship him”.

Vivekanand Continues ...

“ I shall go to the mosque of the Mohammedan ; I shall enter the Christian’s church and kneel before the crucifix. I shall enter the Buddhist temple where I shall take refuge in Buddha and in his law. I shall go into the forest and sit down in meditation with the Hindu, who is trying to see the light which enlightens the heart of everyone.

Not only shall I do all these things but I shall keep my heart open for all that may come in the future . Is Gods book finished ? Or is it still a continuous revelation going on. It is a marvellous book – these spiritual revelations of the world . The Bible , The Vedas , The Koran and all other sacred books are but so many pages and an infinite number of pages remain to be unfolded ”.

Vivekanand’s “ Inclusive Philosophy for Education ” has been adopted as the design basis for this project for its **extremely advanced and timeless** thoughts . Project design basis can be downloaded from [www.nataraja.org.in](http://www.nataraja.org.in)

We should never take the “ Politically Practical“ route when it comes to education because politically practical value systems keep sinking . Our ideals must always be the highest. Vivekanand very rightly says “ That is the goal. We know we cannot reach it yet. Never mind. Do not despair, but do not drag the ideal down ”.

On the other side of the spectrum are those who believe that the solution to enhanced literacy and learning is **computerising the entire learning experience so as to minimise the role of the teacher**. **Both of these positions miss the point that without the right kind of teacher , there can be no learning and no values imparted to the children.**

#### 4.6 THE 25 PROJECT DESIGN CRITERIA

**The problems within the education system in India cannot be solved at the same level of thinking which has created them.**

A need was therefore felt for innovation at the project concept level itself. With this in mind the nataraja foundation decided to list the significant project design criteria and then incorporate these criteria in the design.

After considering various practical issues and separately examining the recommendations of the National Knowledge Commission, we have listed the design criteria on which the Primary & Secondary Education Megaproject is based. The list is a long one and though all the criteria are important , some are more important / urgent than others. Significant project design criteria are listed below :

1. Since India is a multicultural and multi religious society, the project had to have a robust design basis philosophy that was sophisticated and timeless and secular in its fabric to include all religious groups and races without exception (The design basis document which meets this extremely important and exacting criterion is described later in this note).
2. In 6 – 8 years , **100 Million +** children in India will move out of the school going age group without any employable skills. **Project Execution Velocity** was therefore a critical project parameter. In practical terms, this meant that executing this project within the ministry of HRD ( given government in-efficiencies and slippages ) would endanger India’s demographic stability . Therefore an alternate corporate structure based project framework has been explored with the objective of preventing a potentially huge demographic dividend from turning into a massive demographic liability.
3. The quality of any educational system cannot exceed the quality of it’s teachers. This simple axiom has not been understood by planners since Indian Independence in 1947. The most recent Sixth Pay Commission recommendations do not come

even close to what is required in terms of Teachers Salaries since the commission has certain limitations and is bound by existing funds that are made available by the government under central plans.

The Education Megaproject however is looking at a much larger picture where 100 Million Children will exit the school going age group within the next 6 – 8 years without any employable skills , into a business and Investment regime where close to 1.7 Trillion US Dollars is projected to be invested in infrastructure over the next 10 years ( Goldman Sachs projection ).

Given this macro view , the Education Megaproject is not concerned with any pay commission and it's artificial constraints or indeed for that matter with any confined thinking within existing sources of finance of the government of India and projects like the SSA or the Mid Day Meal Scheme to which it has already committed funds.

The Education Megaproject has therefore been designed with an innovative financial structure , to , among other things , make it possible to **pay teachers, market determined salaries**. The enhanced salaries are however just one part of the compensation package which also includes free housing of excellent quality , free medical treatment to teachers and their families and excellent retrial benefits matching the best levels on a global basis. This has been done to ensure a massive shift of the best minds to careers in teaching. This is required as we have just 6 – 8 years to do what we can . Teachers salary levels and benefits and the urgent need for creation of better opportunities is discussed later in this proposal.

4. Even though funding for elementary education has increased almost **5** fold in India since the launch of the Sarva Shiksha Abhiyan ( SSA ) in 2001, we do not have much to show for it . This is mainly because under the SSA there is not much scope for local autonomy and discretion in resource allocation and schools with say 600 students may receive just 2.5 times the funds that a school with 100 students receives. The SSA's structure and it's extremely rigid norms are responsible for this neglect of local needs.

Secondly there is no predictability of fund flows under the SSA which really upsets the whole process of running the schools efficiently. The delays have been mainly due to procedural issues within central and state governments but mostly it is due to a lack of transparency in the SSA system.

The Education Megaproject gets over all these problems because at the design state itself it totally de-centralizes operations first through a unique PPP framework which potentially allows **30,000 new partnerships to bring in new ideas** within a de-centralized framework and secondly through an extensive use of Information Technology it achieves a high degree of granularity wherein it will be possible to drill down and identify how much money is being sent to individual schools ( through a system of alerts ) and which person within the government is holding up decisions. In this manner the project will allow very close monitoring of each school and it will do away with the huge delays and consequently a bunching of operational expenditure .

5. Since Governments usually move very slowly, it would be impossible to re-allocate funds already committed under various government plans even if an alternative “ Teacher Centric “ project made much more sense. It was therefore necessary to devise a new financial structure that could raise **Rs. 597,651 crores** (US \$ **131.38** Billion) for project capex and then **Rs 193632.6 Crores** (US \$ **42.57** Billion) each year

as project operational expenditure, independent of government sources or any kind of resort to donor funds.

6. Given the urgency of the issue raised in ( 2 ) above and to ensure fast track execution of the programme in “ **project mode** “ it was thought necessary to create a new organization responsible for the execution of massive social Infrastructure projects especially those in the areas of Education and Healthcare.

Accordingly, this organization design issue has been addressed through a proposal to create a special organization “ **The Indian Social Infrastructure Corporation ( ISIC )** ” outside of the Ministry of HRD. This will be an Act Of Parliament Company on the same lines as the Financial Institution “ Infrastructure Development Finance Corporation (IDFC Ltd) to be headed by an official / CEO of the rank and standing of a Chief Election Commissioner . This will ensure that he will be effective and impartial.

The project has also adopted an approach that has been previously used very effectively to finance large highway projects in India such as the Golden Quadrangle Project . Accordingly , a special fund “ **The Education Megaproject Fund** “ will also be created through a special Act Of Parliament on the lines of the “ **Central Road Fund Act** “ . Specified cash flows ( Please refer section on financing ) will then be committed to the Education Megaproject.

Adequate safeguards have also been put in place for a proper audit of this organization through the involvement of an oversight committee of eminent elders and a process audit which will involve organizations such as the Tata Institute of Social Sciences and others. Huge leakage of funds as is currently happening in the Mid-Day Meal scheme therefore have been minimized in the design itself.

The institutional structure specified above is necessary as this organization “ **The Indian Social Infrastructure Corporation** ” ( **ISIC** ) will be raising the huge sums mentioned earlier for project capital expenditure ( one time activity ) and disbursing the yearly operational expenditure to the 30,000 Independent Operating entities who would have won the BOT Bids to run the schools and who are committed under the BOT documents to share teaching resources with 420,000 additional / existing schools.

From an execution standpoint, the **ISIC’s Education SPV** will be staffed with upto **50** Senior Educationists as consultants, **300** experienced project finance professionals, **300** Architects specializing in traditional Indian architecture and employed as consultants, **1200** Project Engineers, **100** Lawyers and **300** **IT professionals**. During the operations phase the staffing requirements will change and the organization will employ hundreds of regional managers and accountants. Professionals in the above mentioned quantity are required if we are to deliver the 30,000 new schools within a 10 year timeframe and share the teaching resources with a minimum of 420,000 existing schools. This kind of staffing pattern of the **ISIC** will also ensure that the organization does not become a traditional and extremely bureaucratic government office because most of its people will be subject experts who will be constantly moving in and out on very specific , task oriented, consulting assignments concerning the construction & operation of an extensive school system in project mode. The yearly cost of **ISIC** staffing will be in the region of Rs **450** crores.

**Additionally , to ensure that the interests of all the states are protected, the education secretaries of all state governments will be members of the board.** The chief mentor

of the organization will be the Prime Minister who will be represented by the Minister of HRD. Union territories will be represented by their collectors.

7. The demand for education in India is huge but that demand will materialize and explode only at a certain “ **low** “ price point. **This is a critical criterion not just for poor students but also for “ desired “ project promoters who in this case are actually teachers who cannot afford to set up schools due to lack of funds.** To ensure that the right kind of people set up schools while ensuring that there is no loss in quality and no IRR give-away for potential promoters, the project has to be structured properly. This design criterion has affected the manner and extent of deployment of promoter / bidder funds and ISIC / government disbursements during the construction phase of the project in each of the 30,000 new schools to be set up under the programme.
8. There is a need to “ **Include The Excluded** “ among our children by making it possible for the poorest children to have a good education and at the same time introduce competition between schools that provide education, so that economic efficiency and accountability is achieved at the Primary and Secondary school level in India.

To give effect to both these requirements a Voucher System will be introduced in all the 30,000 new schools. A total of **18 Million Vouchers** will be issued ( 600 Students X 30,000 Schools ) . The Vouchers will be won in a very simply designed national aptitude test. Vouchers will have a face value of approximately Rs **101,400** / Year ( for the 25,500 day schools ) and Rs **129,500** for the 4500 fully Residential schools. Upto 17 % of middle class background students will be on fractional vouchers ( 2 / 3 subsidy ) and there will also be a premium quota ( 3 % of seats ) for NRI's and SAARC nationals who will be paying a premium which will earn the schools some revenue. Each voucher represents not just 1 child in a Megaproject but also 14 other children in the assisted schools on the network. So delivered cost/child is the lowest.

9. One of the primary objectives within this project design has been to assist the existing school system where the teacher – student ratios are at an unacceptably high **1/60** level in most states. The question then was “ **How do we bring the best education possible to village schools at the lowest possible cost on a per student basis** “ ?.

We have found that the best possible way to do this is by sharing high quality teaching resources ( Teachers and educational content ) between the 30,000 New hub schools and 420,000 existing small town & village schools all across India. It is therefore envisaged under this plan that each of the 30,000 new schools will share it's teachers with 14 other schools. To achieve this most important objective the schools are being overstaffed by design.

**Teacher Best Practices** : All teachers do not teach a subject as effectively. Some teachers excel in certain subjects and the Education Megaproject seeks to maximize the reach of these few people who can teach subjects really well. Accordingly , a system of student feedback will be organized to identify the best teachers in India ( by subject ). The feedback programmes will be followed up with competitions among teachers and DVD's will then be prepared based on recordings of classroom sessions. The DVD's will then be distributed across India to cover over 1 million schools by 2025. This will dramatically reduce the cost of the shared teachers programme and it will also reduce the requirement for a huge IT Infrastructure that is being planned within the megaproject. Both options therefore need to be evaluated.

10. The project also seeks to ensure diversity and community ownership of schools. To reduce the capital requirement and to make it possible for a group of retired teachers

to bid for schools under the bidding rounds, the Megaproject is structured in such a way that 85 % of the capex for the individual schools will be funded by the Indian Social Infrastructure Corporation ( ISIC ). In this manner , to start a day school for 600 children , only **Rs 88 Lakhs** is required and to set up a fully residential school on 125 acres of land the promoters will need to put in only **Rs 1.82 Crores**. The debt component of the promoters contribution will be backed by a rolling US \$ **5.05** Billion sovereign loan guarantee by the government of India. Since the project is being built in phases , at no time ( even in phase III with 15,000 schools ) will the need for a sovereign loan guarantee exceed US \$ **5.05** Billion. We have however , indicated a loan guarantee of US \$ 10 Billion in the financial structure to provide comfort to lenders and having to avoid going back to the government of India to get the limit enhanced for whatever reason .

Retired teachers and others interested in education will be preferred bidders and they will be able to avail of very low cost loans from the World Bank / ADB during the construction period. On start-up of the schools, the multilateral agencies will be replaced by commercial banks and project promoters will need to repay the loans to the commercial banks who would have bought out the multilateral loans. In this way the teaching community will be encouraged to be entrepreneurs and to run their own schools. The World bank loans will then go to the next batch of schools being put out on bidding. Interest during construction ( IDC ) will therefore be reduced.

From a returns standpoint for day schools the post tax IRR's will be around 37 % and for residential schools the IRR's will be 29 %. These are very good numbers for a BOT concession and will go a long way towards inviting interest in the setting up of schools from the teaching community and teachers, as already stated , will be preferred BOT concession awardees under the project documents. A similar format, but to a much lower extent could be adopted for institutes of higher learning as the capital requirements there are much higher.

11. Since in excess of 100 Million Children, who currently have no employable skills are to be reached in just 6 – 8 years , the following strategies / methods would have to be deployed :
  - Evening courses to impart skills focussed on the local economy will need to be designed after a thorough study of the needs of the local economy and local industry. The specific objective of these skill development programmes will be to eliminate the need for people to migrate to the cities and join the growing slums there.
  - Extensive use would be made of recorded audio visuals to train people in various skills. Streaming video training content will also be provided by linking the schools with 400,000 Km of Fibre Optic cables already in the ground and by launching 12 additional Edusat satellites to reach the most remote corners of India. The satellites would burn out after a life of 7 years so the programme will pay for the re-launch of satellites as well.
12. Getting the project to scale from 3000 to 30000 schools could be a major show stopper primarily due to a lack of qualified teachers. So , to get the project to scale quickly , it would be necessary to engineer a huge shift of well qualified people to careers in teaching. An alternative lifestyle offer was therefore a critical project parameter for people unhappy in their jobs or stressed out in cramped cities. This has resulted in the idea of having handsome campuses and excellent housing and healthcare / retirement facilities for teachers , regardless of the school being one of the 25,500 new day schools or one of the new 4500 residential schools to be set up

under the programme. It is also intended that **20 %** or **900** of the proposed new residential schools to be set up across India will be of the same standard in terms of Infrastructure as the **Rishi Valley School** run by the Krishnamurti Foundation, 133 Km north of Bangalore. It will be difficult to replicate the Rishi valley school in terms of it's personality ... but for starters we can attempt to replicate it's infrastructure.

13. As corruption linked to excessive regulation is a huge problem in India, there was a need to design the project in a manner that avoided both these problems through effective structuring of the PPP format. Clarity and transparency of the bidding process when the 30,000 new schools are put out on bidding under the project's BOT documents within the 3 bidding rounds starting in 2012 became a project design issue. This translated into the idea that the BOT project awardee in a bidding round will get all clearances and board affiliations / land allotment in a single advice packet which will be presented to them on winning the bid.
14. The Education Megaproject will have a huge impact on not just education and culture but also within areas as diverse as healthcare and sanitation ( Schools will serve as Rural Healthcare centres with a focus on women and children ), Rural development ( Schools in many cases will also involve the construction of Roads , buildings and other infrastructure ), Agriculture ( Farmer Education and Pricing related information ) as well as the environment ( worlds largest environmental project ).

Since the project covers nearly all the areas under which the multilateral financial institutions , including the World Bank / Asian Development Bank have committed loans to India, this project can avail of these soft loans. In Fact the World bank and the Asian Development bank have already sanctioned **US \$ 15.6 Billion** or **Rs 70,964 Crores** worth of loans to India which the Indian Government has not been able to draw as we do not have projects to take these loans. It therefore makes sense to draw all this money for this single project ( given its wide scope ) instead of paying penalty / commitment charges of **Rs 125 Crores** each year which the Comptroller and Auditor General ( CAG ) says the government of India is currently paying.

15. Since a large amount of land ( i.e from 30 acres to 125 acres depending on the schools being day schools or residential schools ) will be given to each of the winning BOT awardees , there is a danger that the whole project might disintegrate into a land grab opportunity . To mitigate this risk and to ensure diversity in school ownership, the following safeguards have been embedded into the project design :
  - No promoter / group of promoters will be allowed to bid for more than 50 schools of a total of 30,000 new schools put out on bids under the BOT documents. There will also be a limit of 10 schools per round per promoter group.
  - **There will be very substantial monitoring of land use by NGO's.** The bid documents will clearly state land use criteria. If an awardee group breaks rules in even a single school , the awardees will see their concessions terminated in all schools under their control and won under the bid documents. There will also be no room for appeal under the project documents in such cases.
16. While the schools and the teacher staring programme will propagate the use of English as the language of commerce, The Education Megaproject notes that English is not a language that is native to India and that it has created an elitist class that is capturing all the opportunities. As a result, our vernacular languages are

dying and the Sanskrit language is dying even faster. There is therefore a need to ensure that adequate opportunities are created within the Indian Marketplace for people to do business in their mother-tongue. The Indian Education Megaproject and its funding mechanism incorporates this requirement and provides for the raising of an additional **US \$ 6.15 Billion** or **Rs 28,000 Crores** especially for the promotion of Indian languages , their teaching and propagation. The scheme would also pay for the creation of web based content in the vernacular medium so that a majority of Indian citizens can take full advantage of the Internet. **This will create opportunities for everyone and not just the english speaking elitist class that is currently being created in the country.** Of the Rs. 28,000 crores mentioned above, **Rs 8000 crores** will be specifically allotted for the revival of Sanskrit literature and its propagation / teaching. Hindi and most importantly Urdu will also be promoted as Urdu has great beauty. Both these languages will get their due share from the balance **Rs 20,000 crores** that are being raised. Sanskrit is the basis of many Indian languages and some foreign ones as well. It is therefore extremely important to preserve Sanskrit by having a foundation course taught in all schools in India. We cannot afford to be politically correct on this issue as Sanskrit forms the basis for the languages spoken by **80 %** of India's people. The Education Megaproject is a project that is designed to set things right in India . It cannot afford to be politically expedient because when we are politically expedient in education, there is just one way we will keep going ...downhill. Indian languages and the preservation of our culture , that is enshrined in our languages, therefore, is a priority item under the megaproject. More money can be raised if need be and required by the different cultures and religious groups within India. **Sanskrit and Urdu teachers will get twice the salary** that is payable to subject matter teachers to encourage more teachers to specialize in these languages. This is being done as Sanskrit and Urdu teachers will not be getting the same opportunities involving overseas assignments that other teachers will be seeing within the megaproject. Secondly, the criteria for certifying teachers to teach these languages will be tougher.

17. Global warming arising from construction activity within this large project is a serious concern. Given the scale of the project, Materials of construction and the architecture chosen became important game changing variables as they will affect the future of construction in India.

Further . since everyone is mindlessly adopting Steel , Glass and Concrete in all new construction ( even though these materials are not best suited to Indian climatic conditions ) it was felt necessary to encourage a more sustainable design involving India's ethnic architecture represented by the **Auroville** and **Laurie Baker** Schools and several others. The project therefore will bring back and encourage the ancient architecture of India which has created structures that have lasted for hundreds of years through the use of local materials . The excellent architecture of the Auroville and the Laurie Baker schools will then , by **2025** become mainstream in Indian towns and villages. A massive vernacular architecture programme to train hundreds of thousands of masons in vernacular architecture for our small towns and villages is therefore an essential part of this project.

18. Certain subjects are central to learning and to the way we live , work and interact with others in society . Author and cultural philosopher George Steiner has written that a study of architecture should be included in every school and college syllabus because of the extraordinary degree to which it interacts with many other disciplines. The theoretical considerations and technical aspects incorporated in architectural design build on a child's basic appreciation of shapes and their harmonious assembly and then go on to embrace disciplines ranging from geology, material science, engineering and design to higher mathematics. But at a very basic level the

realization of a architectural design involves basic concepts of economics and sociology, transportation , urbanization and ecology ...

Given the terrible condition our villages , small towns and cities are in , it is one of the objectives of this project to introduce young minds from **class VIII** onwards to a basic appreciation of **architecture as a compulsory subject** to be studied along with Maths, Science and the Arts. The study of Architecture will be through **Audio-visuals** by showing the children beautiful town plans from cities around the world and handsome buildings in various countries as well as the breathtaking monuments our forefathers built in India using eco – friendly building materials that have lasted for hundreds of years in harmony with nature.

In this manner , our children and future generations in India will be exposed to the best ideas in architecture and they will re-build our villages, towns and cities and will create a very beautiful country by taking in ideas from around the world. Many of us will not live long enough to see the beautiful and handsome cities and towns that our children will build but we would rest assured in the realization that by introducing Architecture as a subject of study for every child in India , we would have given them something that we did not have.

19. India has become prey to rising terrorism in it's neighbourhood and each year hundreds of people die in terrorist attacks. It is also well understood that this problem is only going to grow.

The Indian Education Megaproject has therefore made a provision for one year of compulsory homeland security and leadership training for each student . Both male and female students will therefore undergo this compulsory training and at the end of this 1 year mandatory period they will have an option to undergo a further 6 months of advanced intelligence and awareness training before being discharged from the school system. The training of these students during this period will be provided through appropriate audio visual content and **each school cluster will have a retired army or police officer to provide this training.** The Financial structure of the project provides for the funding of this introductory homeland security programme without any need for financing from the national defence budget. This will create an additional reserve army of **ten million** men and women who can be mobilized within a few days at any time in the future should the nation require it.

The above programme will provide a strong homeland security force. It will create citizens who are more aware of India's security interests as also drastically reduce incidents of terrorism on Indian soil through the creation of a strategic defence culture among the citizens of this country.

20. To meet tight project schedules, it would be necessary to shorten the learning curve. Therefore to validate concepts for such a large project, there would be a need to set up a large number of **Pilot projects** ( 70 + in number and 2 in each state ) before mass rollout of the format across India. With this in mind it was felt necessary to kick off the 70 + pilot ( school ) projects immediately.

The Project Pilot should preferably involve not just the setting up of the “ teacher centric “ schools but should also involve a test case of 1 Public Sector Undertaking with land in a Metro whose FSI will be raised from 2.3 to 12 and after some of that FSI realization is given to the PSU in cash, the balance FSI will be auctioned to fund the construction of the schools. This test case will provide necessary learning to rapidly replicate the model within the larger plan proposed for the Indian Social Infrastructure Corporation to raise the US \$ 40 Billion required from the Urban

Equity withdrawal scheme. It should however be understood that the schools pilots need not wait for the test case PSU transaction to be completed. Govt can easily fund these 70 pilots by itself.

21. **Teacher Absenteeism** : Teacher absenteeism is a huge problem in India. In fact a recent World Bank study has shown that teachers in India on average do not attend school for 25 % of the year. **Given that in most states schools function for 250 days in a year, the 25 % no show by teachers means that teachers attend school for just 188 days in a year.** Nothing can be done to the errant teachers because they have organized themselves into special interest groups as teachers are the largest state employed civil servant group in most Indian states. These special interest groups / pressure groups are also preventing the government from employing teachers on contract basis ( i.e. Para Teachers ) to help bridge the huge gap which exists in India. Tens of millions of children and their parents are suffering because of this and unless something is done to bring down teacher absenteeism and improve teacher accountability there is absolutely no use of doing anything. Actually spending more money on primary education in India is a stupid thing to do given current teacher absentee rates.

The Education Megaproject has therefore considered “ Teacher Absenteeism “ as a critical project design parameter and adequate safeguards have been deployed to ensure teacher accountability / reward in the design not just of the PPP framework but in the suggested design criteria of the teacher employment contracts and retrial benefits.

22. In India we need more religious awareness (not less) and in addition to the usual subjects , there will be a great emphasis on an inclusive Indian culture . The inclusive nature of Indian culture will be stressed. The students will also be given an exposure to Indian history and culture by making Amar Chitra Kathas ( for example ) a part of the syllabus for every child in India.
23. **Project Size** : It was felt that a large project is required, as in India , “ huge “ is different from “ huge “ in other countries. Therefore a target of 30,000 new schools has been set as against say just 6000 schools which would be consumed in a manner similar to the first rain that vanishes instantly into the parched earth.
24. **Syllabus** : **The Education Megaproject does not take a position on a syllabus for the schools.** Since education is a state subject , it is best left to the states to decide what syllabus needs to be taught. However there are just two issues which are important from the national development standpoint and from the standpoint of social and religious harmony :
- While a broad education must be provided , elements within it must train the student with skills / vocational training suited for the local economy and local needs . This is very important
  - Children must be exposed to the best ideas from all religions. We need to do this if we are to maintain social harmony in India.
25. **No School Uniforms** : The objective of the Education Megaproject is to include the excluded. The approach therefore will be to lower the school entry barriers for children and their families as much as possible. International experience has shown that school uniforms are an entry barrier for the poorest children. There will therefore be no prescribed uniform in any of the schools set up under the megaproject. **Instead , the emphasis will be on clean clothes ... torn though they be.**

Each of the above factors has influenced the design of this project in a major way and this has been incorporated not just in the physical design and within the key relationships between various stakeholders but in the financial design as well.

#### 4.7 TEACHERS SALARIES AND BENEFITS VS. RESPONSIBILITIES

The 6<sup>th</sup> pay commission increased teachers salaries by 40 – 70 % ( large jump ). But as this increase is from a low base it will not do anything to make the teaching profession more attractive for young graduates. It can therefore be confidently said that the current plan to improve teacher quality will **fail miserably** and if nothing is done, tens of millions of children will leave the school system without having ever had a chance to study under the guidance of a good teacher.

Given that a secondary school teacher with 10 years of experience in a good and well known school made **Rs 12,000** per month before the 6<sup>th</sup> Pay Commission, he / she will now draw between **Rs 16,800 – Rs 20,400** per month. **These numbers are for well known schools,** in most schools in India however , even after the 6<sup>th</sup> Pay commission implementation most teachers will earn maximum salaries of **Rs 12,000** per month.

The table below shows the augmented salaries of teachers after the implementation of the 6<sup>th</sup> pay commission :

**Majority Teachers Salaries In India ( 2008 - 2009 )  
( After VI th Pay Commission Implementation )**

TEACHERS SALARIES IN INDIA				
POST /GRADE	PRE REVISED SCALE	REVISED SCALE AFTER VI th PAY COMMISSION IMPLEMENTATION	PAY BAND	GRADE PAY
<b>PRIMARY SCHOOL TEACHER</b>				
GRADE-III	4500-7000	6500-10500	PB-2	4200
GRADE-II	5500-9000	7450-11500	PB-2	4600
GRADE-I	6500-10500	7500-12000	PB-2	4800
<b>TRAINED GRADUATE TEACHER</b>				
GRADE-III				4600
GRADE-II	6500-10500	7500-12000	PB-2	4800
GRADE-I	7500-12000	8000-13500	PB-2	5400
<b>POST GRADUATE TEACHER</b>				
GRADE-III	6500-10500	7500-12000	PB-2	4800
GRADE-II	7500-12000	8000-13500	PB-3	5400
GRADE-I	8000-13500	10000-15200	PB-3	6600
<b>VICE PRINCIPAL</b>				
GRADE-II	7500-12000	8000-13500	PB-3	5400
GRADE-I	8000-13500	10000-15200	PB-3	6600
<b>PRINCIPAL EDUCATION OFFICER</b>	10000-15200	12000-16500	PB-3	7600

Source : [www.SimpleTaxIndia.org](http://www.SimpleTaxIndia.org)  
<http://www.simpletaxindia.org/2008/09/teachers-pay-scale-after-gazette.html>

NOTE : Post of Education officer/Assistant Director of Education stands merged with the post of Deputy Director of education

**While these salary levels may appear to be decent , they are, in fact just a little bit above that of a crane operator or a welder with between 3 – 5 years experience.** So the question remains why would a new graduate choose to become a teacher when he / she could start off in any other job with starting salaries ranging from Rs 40,000 – Rs 60,000 per month and in a few years make over a lakh of rupees per month. Teachers have no such upside possibilities in their jobs. **There is therefore no incentive even after the 6<sup>th</sup> Pay commission for a young graduate to become a teacher.** It comes as no surprise therefore that 45 % of teachers in India have not cleared their class XII exams.

The Education Megaproject seeks to completely change the current remunerative system for teachers in India and include a system of benefits that would make it very attractive for the best minds to join the teaching profession. More women will also be encouraged.

Since the schools are conceptualized around the Teacher the design will allow for the creation of very elegant yet low cost campuses built in the vernacular style. **The project ( 85 % will be day schools and 15 % will be residential schools ) will provide for excellent teachers housing in both formats and money has specifically made available for this in the project financial structure.** Teachers will also get decent salaries ( Rs 20,000 / month as a starting salary ). There will also be free Medical treatment and a house provided to the teacher on retirement. While the project will not match corporate salaries, It will exceed corporate standards in providing a superior quality of life for the teacher and his family. **The project also requires that the decade 2010 - 2020 be declared as the decade of the Teacher in India.**

**Average Teacher Salary within the education megaproject will range from Rs 25,000 – Rs 30,000 per month.** In addition during their careers with the schools, teachers will be encouraged to grow in their profession by undertaking the following activities which might increase their personal stature domestically / internationally :

1. Writing of papers on various subjects and free mobility in teaching different subjects in the schools without any kind of restriction . The only condition here being that students should be happy with the quality of subject delivery. Teachers do not have this kind of flexibility in schools today.
2. Doing project work relating to education for companies or for the government of India ... this could provides additional income for the teacher and the school which employs the him / her. Creating educational content for the global market and taking up overseas assignments will be a major activity within this framework.
3. Participating in the National IT / Internet Content development programme for the Education Megaproject in Vernacular Languages / Sanskrit ( This is a Rs **28,000 Crores** Programme under the ISIC to encourage local languages ) . **Sanskrit and Urdu teachers will get twice the salary** that is payable to subject matter teachers to encourage more teachers to specialize in these languages. This is being done as Sanskrit and Urdu teachers will not be getting the same opportunities involving overseas assignments that other teachers will be seeing within the megaproject. Secondly, the criteria for certifying teachers to teach these languages will be tougher.

All the above is being done to encourage a mass migration of professionals from other professions to a career in teaching with the objective of educating as many of the 100 Million + children who will leave the school system within the next 6 – 8 years. This is a matter of great urgency and we cannot rely on the 6<sup>th</sup> pay commission salaries to deliver the results that are urgently required.

Appointment of teachers and some of the terms within their 5 year renewable contracts will be a matter for the individual school managements ( Those who win in the bidding rounds ) to decide but the ISIC will specify a standard employment contract and salary level that will be binding. As the Education Megaproject has its own independent financing , the schools set up under it will operate outside the 6<sup>th</sup> Pay commission and successive pay commissions whose upper limit on salaries is limited by the salaries drawn by senior government officials.

There is just one point as described earlier regarding teacher absenteeism and the need for accountability where there is a need to be very firm. Accordingly , to bring in accountability and performance , all teachers, as stated earlier will be on 5 year renewable contracts based on performance. On successful completion of **3** , five year contracts, teachers will be eligible for retirement benefits which will be considerable.

#### 4.8 STRATEGY FOR TEACHER RECRUITMENT & TRAINING

The Education Megaproject will require 1.74 Million New Teachers by 2023. Getting enough high quality people to leave their current professions and take up careers in teaching in India will therefore be a very major challenge on the execution side.

To achieve this tough HR target, it will be necessary to simultaneously work on three different fronts :

1. Education Megaproject Teacher Lifestyle Marketing ... This will be a comprehensive lifestyle marketing programme which will involve the print and Television media. Since teachers will be provided with a good salary in addition to excellent housing , research opportunities , overseas assignments , healthcare and retirement benefits including free post retirement housing, these benefits will be highlighted in the advertisements which will run periodically over a period ranging from 8 – 10 years. Total Advertisement budget for this will be in the range of Rs 800 – Rs 1000 Crores over a **10** year period.
2. Teacher Recruitment : The project will need to be staffed by a huge team of HR consultants / Retired Teachers who will help interview and recruit the right people for the programme. To recruit approximately **1.74** Million Teachers over a 10 year period , it is estimated that the project will require a team of about **2000** HR consultants on a full time basis. These HR people however will not be on the rolls of the ISIC but will be paid a commission for bringing in candidates.
3. Teacher Training : Once the Advertisement / Lifestyle marketing programme is initiated , the HR team will begin short-listing potential candidates and then schedule their appointment to match the commissioning schedules of the schools.

A Total of **500** Teacher training institutes will be set up for the purpose of training the newly selected individuals for a teaching career. Since all these individuals will be reasonably well qualified, only a short term , intensive teachers training programme will be required to prepare them for a teaching career. The duration of the accelerated B.Ed course will be 6 months - 1 year and the **500** training institutes will train 1,50,000 teachers each year. The Institutes will be set up under a separate ( Public Private Partnership ) PPP Model with private entrepreneurs under prescribed norms. The programme will generate more teachers than are required by the Education Megaproject as it is expected that some of the individuals who are trained will leave the country. However since the programme and teacher benefits after completion of the course are expected to be the best in class on a global basis we do not expect more than a **8 %** leakage from the programme for teaching assignments abroad.

#### 4.9 THE EDUCATIONAL VOUCHER SYSTEM

The education Megaproject has a large and innovative Educational Voucher programme based on global best practices.

A total of **18 Million Educational Vouchers** will be distributed to the economically weaker sections of society .**This WILL NOT be a caste based distribution** but will be targeted at the poorest citizens of India and **80 %** of the vouchers will be distributed in rural areas where **80 %** of the 30,000 schools will be built.

Students from all over India between Standards IV and X will be eligible to take a yearly simple aptitude test (This will not be an exam to test proficiency or Knowledge ) as the idea

is to test basic aptitude and to **Include the Excluded** among our children. The score on this aptitude test will be combined / multiplied with an **inverse metric** of the educational history of the child to yield a total score.

For example if a child scores high on aptitude but has already had a good education in a good school he will get a lower score than a rural child who has scored equally on aptitude but has not attended a proper school before. This inclusion of an **inverse metric** will ensure that only the most needy children will win the Educational Vouchers ... thereby promoting social and economic justice to all irrespective of cast , creed and religion. All existing schools in India will be given a rating based on their fees charged and the demographic profile of their existing students. This rating will then go to form the inverse metric described above.

The Educational Vouchers will be structurally designed to be a promissory note from the Indian Social Infrastructure Corporation ( **ISIC** ) to the Schools. **No child or his / her parents will receive any money under the system.** After the child passes the aptitude test and wins a voucher, the child's parents will have a right to decide where their son / daughter will study. The Voucher will therefore be transferable between schools but not between students.

It is critical for the success of the Indian Education Megaproject that the Voucher programme provides for a fair economic return to the parties who bid for setting up the schools. Each Voucher will carry both an actual cost of education and a face value that will be payable to the school that admits the child. Under the education megaproject and its current cost structure , Day schools will have an actual cost of education of **Rs 97,400** and a face value of **Rs 101,400** ( the face value will be payable to the school as fees ). The numbers for the residential schools will be **Rs 119,500** and **Rs 129,500** ( face value ). In addition to this service provision charge as just described ( **Rs. 4000 / -** for day schools and **Rs 10,000 / -** for residential schools ) there will also be a guaranteed return of 20 % on equity for promoters which is included in the basic cost as mentioned above.

In the beginning however , to fill the schools , children in all classes from Class IV to Class XI will be allowed to take an entrance test suited to their particular level. Once the schools are filled , the entrance test will be held only at the class IV level. This is being done because most of the learning happens after class III and between classes IV and XII. The Competitive exam will be open to all children in India at the class III level irrespective of caste , creed , religion , sex or economic status. This will ensure equity and social justice while at the same time making the most efficient use of scarce financial resources. Once a child clears the entrance test he / she will have access to education that today is available only to the well off. In this manner by making it possible for every child in the country to compete in a national exam, fairness and transparency will be assured within the system. This conducting of a simultaneous entrance test for 18 million Children is not such a big issue as we have been conducting elections on a much bigger scale in India. Holding the entrance test is therefore not a problem.

**The vouchers also provide a foolproof and market determined method to ensure proper behaviour of the school managements.** It is therefore an explicit requirement of the contractual structure that if more than 5 % of the children in a school decide to change the school by moving their voucher to another school, the Information architecture of the Megaproject will trigger a procedure that will result in the schools management receiving a show cause notice . If 10 % of the children switch their voucher, the system will trigger a contract termination procedure from the ISIC.

The education voucher programme has a huge long term social objective as well. By targeting economic benefits to the poorest sections of our society, based on aptitude , it

seeks to, over a period of 15 – 20 years, an end to caste based admissions to institutes of higher education and within 25 years to end all job reservations in India.

The cost of the education vouchers must be seen in the context of the larger economy that they seek to create by 2025. We need to graduate to a new level of thinking in India which seeks to provide human resources to run a US \$ **4.5 Trillion** economy by 2025.

#### 4.10 THE COMMUNITY SECURITY & LEADERSHIP PROGRAMME

The provision of leadership skills to young people is one of the core focus areas of the Education Megaproject.

It needs to be clearly mentioned at the outset that the focus will be on leadership training and not military training per se. Broadly, the objective is to produce leaders, who are required in all fields of endeavour.

Military discipline, patriotism, precision, neatness, obedience to orders etc, are inherent in leadership training. Training will therefore be of the moderately low level kind as we currently have within the National Cadet Corps (NCC). At present there are approximately **1.3** Million students in the NCC, the Government has been wanting to increase the strength of the NCC to **2.0** Million but it has been unable to do this due to two reasons. **Firstly, military officers, especially army officers for secondment to schools and colleges as instructors for NCC training are not available, as there is a huge shortage of officers. Secondly, funds continue to be a major constraint.** The Education Megaproject solves the financing problem that is currently blocking the expansion of the NCC and at the same time it will expand the scope of the NCC to include strategic electives. The overall aim of this enhanced training will be to spread awareness of security related issues and to create a strategic culture within the people of India.

India has been a major victim of the menace of terrorism over the last 20 years. This problem has increased manifold since 2004 and it is now an established fact that since 2004, more Indian citizens have been killed in terrorist incidents than all of North America, South America, Europe and Eurasia put together. A Times of India study in August 2007 found that India stood second after only Iraq in people killed in terrorist incidents with 3674 deaths.

**While national policies and actions of the intelligence and security forces would aim at dealing with this menace, there is a definite need for much more awareness of the problem in the populace which could then help the security forces in tackling it. It is here that aware and trained young persons are needed in all parts of the country, who can supplement, albeit passively, the efforts of the various instruments of the state. This is best done by raising awareness levels and educating the youth.**

Given that the security situation is going to deteriorate further over the next few decades, there is a need to reduce systemic risk by providing up to **12** months of community security and leadership training to all students in our schools and Universities. To achieve this objective at the lowest possible cost, the Education Megaproject proposes to use the approximately **60,000** military personnel who retire each year.

Today, our Ex-servicemen represent a huge potential resource but it is being wasted. Once they retire, armed forces personnel do not get jobs easily and when they do get jobs, these jobs are at places far away from their hometowns. The Education Megaproject sees these **60,000** retiring armed forces personnel, **who are comparatively young and have the training and the talent**, as a huge opportunity and seeks to utilize these people by entrusting the work of leadership training of our young people to them. We believe that ex-servicemen are fully qualified to play this vital role in the education process if their need for proximity to their homes is adequately met.

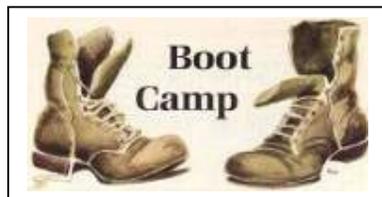
Accordingly, starting in **2012**, on the commencement of **Phase I** bidding for 6000 schools, the Education Megaproject Authority will begin a process of identifying **6000** retired officers and **42,000** retired JCO's and other ranks who will be required for the leadership programme in the six states of Uttar Pradesh, Bihar, Rajasthan, Madhya Pradesh, Andhra Pradesh and West Bengal. These personnel will be attached to the 6000 schools that will be commissioned in 2014 and they will be responsible for the leadership training programme in **6000** schools and their assisted network of **84,000** schools under the teaching sharing programme. The retired veterans will be absorbed within the staff of the schools at the appropriate level as has already been budgeted for within the programme. In this way, there will be no increase of the operations expenditure incurred on a per year basis. A similar process will be followed within the other bidding rounds. On the full commissioning of the Education Megaproject in 2023, the Ex-Servicemen staff within the Megaproject will stand at **30,000** retired service officers and **210,000** JCO's and other ranks. With army veterans and ex-servicemen who will be manning it, this will be a cheaper and far more viable option than using active army personnel who are in very short supply anyway. Further, the Education Megaproject will be providing all the financing from within its own structure with **Zero** requirement for funds from either the Ministry of HRD or from the Ministry of Defence.

Each security training instructor ( i.e retired officer ) will be responsible not just for the training of the 600 students studying on education vouchers within the school set up under the bidding rounds but also for the training of an additional **8400** students ( through 7 JCO's / **NCO'S** ) in the **14** schools with which the school will share teaching resources. Training will be on the same format of the current NCC with the focus being on basic drill, military discipline, patriotism, precision, neatness, obedience to orders etc as are inherent in leadership training. Students will also be provided with extensive exposure to leadership oriented film based content which will include interesting subjects such as military history and films on the lives of great leaders both Indian and foreign who have made a major contribution through their ideas. This training together with instructor led courses in basic leadership skills will serve as a good and cost effective foundation programme.

People from all walks of life may actually welcome a course in basic leadership training and national security as it guarantees the security of their lives and property within their own cities, towns and villages.

Each student in India will be required to complete 360 days of this compulsory basic security and leadership training before they complete higher secondary school ( Class XII ). The training will commence in class VI and will be at two levels :

1. Elementary Leadership Training : This will consist of a 180 days of compulsory elementary training, similar to the NCC training students receive in schools and colleges in India today. As has been mentioned before, the emphasis will be on drill and team work where students will inculcate basic discipline, self-reliance and respect for others. This elementary training will be imparted to boys and girls between Class VI and Class IX at a yearly BOOT Camp which will last for upto 3 weeks. Students will also undergo a basic course in military history during this period by exposure to film based content which will include audio-visuals and narration of the life histories of great military leaders from India and around the world. Necessary content will be prepared by the Education Megaproject and distributed over the terabit network free of cost. The idea is to inspire young people and make them aware of their national responsibilities as aware citizens.



2. Leadership Training : The objective of this training is to create a strategic culture in India within our young people and tomorrows future citizens to enable them to take up leadership roles in their chosen professions whatever they might be. The training will require students to take electives in subjects such as basic governance structures and civics and civil defence / First aid and will also include more sophisticated electives such as geopolitics and military history for those with a greater security inclination . A few electives will also include field visits to military ( Army , Navy and Air Force ) bases in their respective states. These visits will be jointly organized by the Department of Education and the Ministry of Defence. Students . Students will be required to complete 1440 Hours of course work ( 180 days of 8 hours each ) between the classes IX and XII. Recorded video content will be distributed to drastically cut costs where the network is not readily available.

The electives will have a paper that must be passed before students complete their graduation and will be in one of several areas :

1. Homeland Security / Civil Defence / First Aid measures
2. Basic governance structures and Civics
3. Basic Anti Terror & Vigilance Skills
4. Use of Firearms & basic Military Equipment
5. Geopolitics & Military Strategy

Students will need to choose from the above electives and can take any two of the above courses. They will however need to get a minimum score in these electives to enable them to graduate.

The Education Megaproject will be spending tens of thousands of crores of rupees each year on providing free education vouchers for millions of students. An education voucher is a privilege and it also carries with it some obligations. Therefore the nation deserves to get something in return for all this money that is being spent to educate citizens.

In accordance with this privilege – obligations understanding, students ( both boys and girls ) benefiting from the education voucher programme will be required to undergo the above described training with the view of forming a second line of defence for the nation.

It is assumed that a majority of the students will take up the first two of the above electives as entry to these courses is easiest and with no background checks that will be required for the other three courses.

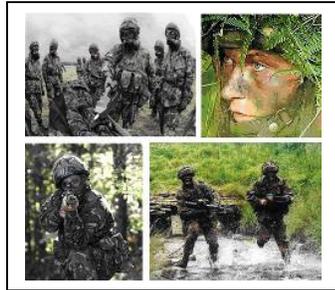
Some of the electives such as training in firearms and military technologies at the graduate level will only be provided after a proper background check of all applicants for this particular elective. **We estimate that just 5 % of students will take this elective.** The training will include field visits to Military camps and actual exposure to advanced weapons used by the Army, Navy and the Air Force. While all students within this elective will be required to learn how to use a hand gun , their exposure to the Navy and the Airforce will be restricted to visits to Naval and Air Bases where they will see Aircraft Carriers, Submarines and modern fighter aircraft. This will increase their awareness.



Please note : The pictures displayed are intended to convey the content planned for the Audio Visuals within the programme . Only 5 % of the students at a maximum will actually undergo such training.

Besides a second course in Military History , students of geopolitics will be given extensive exposure to documentaries of past global conflicts and how they were resolved.

Finally , students will be required to take an exam , the score of which will be added to their other scores and this will be considered as important in their admission to higher institutes of learning and college. Students who have been on an education voucher but who do not clear their chosen electives in college from the above list before their final year will not receive their graduate degrees.



Please note : The pictures displayed are intended to convey the content planned for the Audio Visuals within the programme . Only 5 % of the students at a maximum will actually undergo such training.

As stated before , students and their parents are not expected to oppose such a programme as almost everyone is now fully aware of the huge terrorist problem from neighbouring countries that India is faced with. Secondly the content of the course will be designed in such a way as to make it very interesting and easy for students. The use of audio-visuals and field visits will ensure that all students will be more than willing to undergo this free training.



Please note : The pictures displayed are intended to convey the content planned for the Audio Visuals within the programme . Only 5 % of the students at a maximum will actually undergo such training.

Since most of the training will be provided by Ex-Servicemen and army veterans whose salary costs are already included within the Education Megaproject's stated operations expenditure which is fully financed as specified in the operations financial structure, we do not see any spill over of the costs of this leadership development programme or a need for funding from the ministry of HRD or the Ministry Of Defence.

The above programme in hub schools and assisted schools will churn out 8.4 Million class XII students in 2018 and 24 million students each year after 2024. Within 10 years of the commencement of the programme , it will create an extremely vibrant and disciplined young population with a reasonably good understanding of national security and civil defence issues.

#### 4.11 EDUCATION MEGAPROJECT FINANCING

#### 4.12 FINANCIAL INNOVATION : THE NEED FOR NEW STRUCTURES

The education megaproject has a financing strategy which takes due notice of the Government of India's limitations and budgetary constraints. The strategy therefore is to go

for innovative structures that will make minimal demands on current sources of finance while simultaneously opening up new financing options and structures to create a benchmark project for other countries to follow.

#### 4.12.1 GOVERNMENT OF INDIA'S CURRENT FUNDING PROBLEMS

The Right Of Children To Free And Compulsory Education Act ( RTE ) has been notified on the 1<sup>st</sup> Of April 2010. With this the 86<sup>th</sup> Constitutional Amendment making education for children between the ages of 6 and 14 a fundamental right will also be notified. The amendment was passed by Parliament in 2002. The inordinate delay in notifying the act has been due to lack of clarity on the quantum of funds required to operationalize the legislation as well as lack of clarity on the sharing of associated costs between the centre and the states.

**It is of importance to note that the RTE is actionable legislation .** This means that the Central Government can be taken to court for not ensuring free education to any child between the ages of 6 and 14.

It has now been declared that the total cost of implementing the RTE Act over a period of 5 years is **1,71,000** Crores. For the remaining two years of the **XI** th Plan period , this money is being made available by taking Rs 34,000 Crores that has been earmarked for the Sarva Shiksha Abhiyan. The states share for this period would be Rs 32,000 Crores. Keeping in mind that the centre's share for the XII th Five year plan would be 50 : 50 , the projected plan allocation for the first three years of the period can be expected to be Rs 50,000 Crores. The States would have to shell out the remaining Rs 50,000 crores. In this way over the next 5 years the centres share would be Rs 84,000 Crores and the States will be providing Rs 82,000 Crores. Summing up these two numbers gives a total of Rs 166,000 Crores . There is however some confusion on where the balance Rs 5,000 Crores will come from to make up the Rs 171,000 Crores that is being put forward as the total cost of implementing the RTE Act over the next 5 years.

**The states have already indicated their inability to shoulder the higher burden of the RTE Act.** Some of the states have already suggested that the centre should provide anywhere between **90 % – 100 %** of the cost of implementing the Act. The States are saying that they can come up with just Rs 16,000 Crores for the first two years ( Rs 8,000 each year ) and Rs 30,000 Crores for the balance three years ( Rs 10,000 Crores each year of the first three years of the XIIth Plan ). **This would mean a shortfall of Rs 36,000 crores.** In the light of this the 13<sup>th</sup> Finance Commission has suggested an increase of a few thousand crores in allocation for the SSA so as to bridge the deficit.

**Even if all this money is arranged for and spent, it will still fail to prevent a huge demographic problem in India as most of the 100 Million + children will still exit the formal school system without any employable skills 6 – 8 years from now.** The huge conceptual flaws in the Sarva Shiksha Abhiyan ( SSA ) as discussed earlier , will do nothing to help the emerging situation.

#### 4.13 FINANCIAL STRUCTURE RATIONALE : MATCHING SOCIAL DEFICITS WITH FUNDING SOURCES

There are two main, apparently un-related issues that have governed the selection of sources for 30 % of the fund requirements of this project. We will explain these concepts first , in detail, before going into the balance 70 % of the financing. The combination of this 30 % with the rest of the structure makes this project different from other social infrastructure financings from around the world.

The first big problem, as stated before in this note, is that in excess of 100 Million children in villages , small towns and even in cities across India will exit the school going age bracket within the next 6 – 8 years without any employable skills and this will lead to extremely serious problems on the demographic front within India.

The second problem is that all major Indian cities and towns are turning into huge slums as migration from the villages and small towns to cities continues unabated.

This massive migration into Indian cities can be mitigated in two ways :

1. By implementing Dr. APJ Abdul Kalam's PURA ( Providing Urban Amenities in Rural Areas ) Model ... of which the Education Megaproject is a part. This will to some extent stop the huge migration to our cities.
2. By increasing the FSI in Indian cities and then re-zoning and re-planning them. Current limitations / ceilings on the Floor Space Index or FSI in Indian cities is therefore a big showstopper which will continue to seriously impede India's growth if drastic action is not taken.

**Not relaxing the constraints on either the skills / education issue or the FSI issue will lead to chaos and disharmony in India.**

The first problem needs to be solved through a massive expansion of the education network so as to take the light of learning to every child in every village. In addition, hundreds of universities and thousands of polytechnics will need to be built . All this requires a lot of money but no money is available from any of the conventional sources within the government of India and subsequent to the passage of the much awaited " Right of Children to Free and Compulsory Education Act, 2009 ", the Indian government is clueless regarding where the huge sums required will come from.

**India's cities and towns however , with their sky rocketing land values , are an unlimited source of cash which can easily fund not only their own development but that of every village and small town in India.**

A Key question therefore is " **Can we draw land equity out of our cities and deploy some of that money to bring the most modern education and sophisticated healthcare to every village and town across India ?** " .

**The idea therefore is that since we are going to be left with no option but to increase the FSI of our cities from 2.5 – 3.5 levels currently to a maximum of 12 – 16 in certain areas , over the next 3 – 5 years, can we use this once in a lifetime opportunity to spread that wealth all over the country and take it to every village and town by providing every village with 2 – 3 good schools and a good hospital and health care centre ?**

City	Sl. No.	PSU / Government Department	Current Size Of Land Bank (Acres)	Land lying unutilized or in obsolescent condition (Acres)	Current Land Price Based on recent deals (Rs Crores / Acre)	Practical Value Taken For Bulk Deals (Rs Crores / Acre)	Current Practical Valuation Of Sample Land For Bulk Deals (Rs. Crores)	Current FSI	Proposed FSI Range	Possible Unlocked Value To Nation After Converting FSI through TDR's - Cash through Enhanced FSI Sharing (Rs. Crores)
Mumbai	1	Mumbai Port Trust	1800	836	480	300	167,200.00	1.3 - 1.5	12 - 16	58520
	2	PSU Corporation Of India	50	50	480	300	70,000.00			3590
	3	Wardheya Chemicals & Fertilizers	800	300	480	300	20,000.00			7900
Assumed that just 0.5 % of Vacant Railway land ( i.e. 565 Acres out of 113000 Acres ) is in large cities										
All India	4	Railways	113000	965	200	300	113,000.00	1.3 - 1.5	12 - 16	39550
6 Metro	5	NSRI Land with Department Of Telecom	370	770	200	300	154,000.00	1.3 - 2.5	12 - 16	52900
One Lakh - Sixty Two Thousand - Four Hundred and Seventy Thousand Crores										
<b>Total Value Released From Small Sample Set of Just 5 organizations out of Hundreds of Surplus Prime Real Estate Owning PSU's / Govt. Departments in India</b>										<b>162470</b>

Notes : Valuations / Acre will fall and as will Square feet rates once FSI's are raised ... A fall of 38 % in value / acre is being assumed when FSI is raised from the 1.3 - 1.5 band to the 12 - 16 band for the purpose of calculation

To Calculate Unlocked Value to the Nation for Social Infrastructure Projects in Rural Areas it is assumed that 50 % of the upside, on the sale of the land with enhanced FSI is shared with PSU's / Government departments either as TDR's or given to them in cash.

To my mind , the marriage of the simultaneous and huge cash shortage in the area of education / skills development with the huge surplus which will be realized on freeing FSI in Indian cities ... is therefore only a matter of time and India will change all its show-stopping regulations to make this happen. There has already been some thinking on this subject within the World Bank group on Unlocking land values in urban India ( World Bank PPIAF Policy paper No 7 , by George E Peterson ' 2009) and this paper could be used as a framework for decision making within the govt. of India.

From the above it is quite clear that the future growth of India over the next 15 – 20 years depends on the choice we make with regards of the Floor Space Index (FSI 's) in our cities and how we will use the massive liquidity ( of the order of approximately **US \$ 3 Trillion** ) that will be generated as a result. It is to be noted that such a swap will not create inflationary pressures within the economy and therein lies it's strongest point.

#### **4.14 EDUCATION MEGAPROJECT FINANCING**

Given the fact that the central government as well as most state governments are running fiscal deficits in excess of **4 % – 5 %** , it does not appear realistic to expect any government ( Central or State ) to finance a large capex programme in education and other means must be found. This calls for financial innovation and the tapping into of hitherto untapped and new sources of funds and the creation of new financial and legal structures.

To arrive at an appropriate financing mix we have studied a number of options and numerous recommendations made by a number of experts both Indian and foreign. We were however not able to find large enough pools of finance in all the material we went through. The Nataraja Foundation therefore had to innovate and we started looking at all kinds of possibilities because without the money we did not have a project to talk about.

Finally we have been able to put together a list of possible financing options. For a proper understanding of the thinking behind this list we would like to direct our readers to **Annexure I** ( Sources of Finance and related assumptions ).

The list of sources of finance for the Education Megaproject is as follows :

1. Expanded GST ... 10 % of delta additional receivables to be securitized
2. 30 % of a proposed new tax on the services component in future Infrastructure projects
3. A Graduate Tax payable by Employers In India
4. A Quantized Tobin Tax on Forex Transactions
5. Urban Equity Withdrawal from PSU Land at higher Floor Space Indexes (FSI's )
6. Yearly Rent From Re-developed PSU Land
7. Teacher / Content Outsourcing Business
8. Domestic Students on Fractional Vouchers / NRI Quota and SAARC / Foreign Students
9. Un-Utilized Funds with various Ministries and NGO's
10. Equity Infusion By Promoter groups for 25,500 Day Schools and 4500 Residential Schools
11. Committed and Un-Utilized Funds Lying with the World bank and the Asian Development Bank
12. Service Tax Feedback from a US \$ 45 Billion / year new education business due to the Megaproject
13. 1 % of India's Foreign Exchange Reserves ( Currently at US \$ 278 Billion ) ... **This is a backup source ... not active within Rev 03.**
14. Dis-investment proceeds from Public Sector and Bank privatizations ... **This is a backup source ... not active within Rev 03.**

The above sources have been combined within our new reference frame of the Indian economy circa 2025. To mobilize the above resources and direct them towards executing the Education

Megaproject, there is a need for Parliament to enact two special legislations to give birth to a legal structure consisting of :

1. A Statutory Organization “**The Indian Social Infrastructure Corporation ( ISIC )**” which will function as the nodal agency for setting up large primary education and healthcare projects.
3. A statutory fund “ **The Indian Education Megaproject Fund** “ which will be on the lines of the “Central Road Fund “, which has previously helped to successfully finance large highway projects in India such as the Golden Quadrangle project. The suggestion for the creation of this fund has come from Dr. Urjit Patel .

The creation of the above structure is essential for the execution of the Education Megaproject. Having described the institutional structure required for execution, we are now in a position to discuss the construction phase financing within the Megaproject.

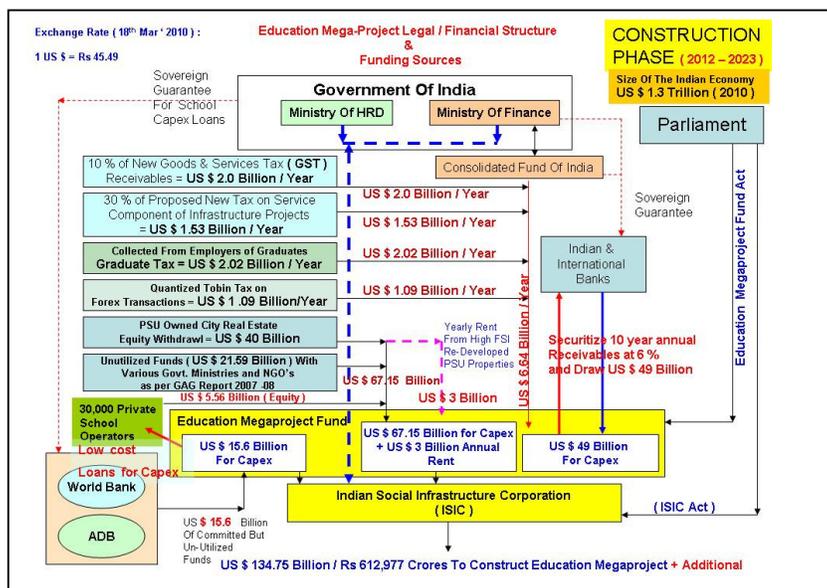
#### 4.14.1 CONSTRUCTION PHASE

The financing strategy of this project draws on ideas and experience gained in India while successfully financing huge highway projects like the “ Golden Quadrangle ” and the “ North – South, East – West Corridor ”. The basic concepts and structures that are being suggested for this have therefore already been tested and they have worked in the past. **The only difference is in the sources of finance, some of which are new.**

As has been stated earlier, the Education Megaproject is essentially a large and highly organized Capex Plan that will raise fixed asset investments in primary and secondary education by a factor of 5 times over even currently expanded levels and maintain that investment level for **10 years** without a break. This level is much higher than the “ **6 %** of GDP on Education “ promise that has been committed under the **XI<sup>th</sup>** plan but as we will presently demonstrate , this level of Capex is very much within our reach.

The Education Megaproject has a layered financial structure comprising of **8** different sources of finance which are brought in at different stages of the project in the course of it’s 10 year construction phase. The choice of financial sources has been dictated by a project design specification which required that no new demands would be placed on the government’s limited budget. This has been achieved in the project design and the scheme essentially comes at **very low cost** to Government of India and the financial structure for the project will be able to effortlessly raise the US \$ 131.38 Billion or Rs 5,97,651 crores for the programme’s capital expenditure as well as the yearly US \$ 42.57 Billion or Rs 193,632 Crores operating expenditure that will be needed once the entire system is commissioned in 2023.

Fig 1 : Source of Funds ( Construction Phase )



Of the eight different sources of financing, five are totally new and three are more conventional. Four of the sources are yearly cash flows that will be securitized to raise nearly half the Capital Expenditure upfront while the other three are one time or phased bullet payments into the Education Megaproject Fund. Within the bullet payment pool two are large already committed yet un-utilized funds which will be drawn down immediately on project commencement. The financing sources are now described.

- 1. Securitizing 10 % of New Services Tax Receivables under Goods and Services Tax ( GST )** to raise a yearly cashflow of US \$ 1.9 Billion. This amount will be pooled with three other components under ( 2 ), ( 3 ) and ( 4 ) below and then the pooled cashflows will be securitised at a 6 % discount rate to raise US \$ 49 Billion from leading national and International Banks to finance Project Capex.

A little background is necessary to explain the GST Securitization facility .

Over the last few years , Services have contributed to approximately **70 %** of the growth of the Indian Economy and today services comprise **55 %** of the Indian economy with Manufacturing contributing 24 %and Agriculture Contributing 18.5 % to GDP .Under the hitherto prevailing indirect tax regime prevailing in India services could be taxed only by the central government and for this purposes the levy has been collected as an Excise Duty. State Governments under the Indian Constitution were not allowed to collect Sales Taxes on services because services were not included in the concurrent list of the constitution of India.

The Goods and Services Tax ( GST ) is a huge improvement over the existing Value Added Tax System and it subsumes not just both goods and service taxes but a large number of other taxes as well within it , greatly simplifying the Tax Regime in India and significantly improving revenue collection and spreading the tax net.

The New Goods and Services Tax ( GST ) Regime which goes into effect on the 1<sup>st</sup> of April 2011 is therefore expected to realize an additional delta GDP ( net addition ) of US \$ 15 Billion each year for the Central and State Governments as per the latest estimates of the National Council of Applied Economics Research ( NCAER ). The Net Present Value of these receivables over the next few years is of the order of **US \$ 500 Billion** according to the Chairman of the 13<sup>th</sup> Finance Commission, Dr. Vijay Kelkar.

The Following is an excerpt from a speech delivered by Dr. Vijay Kelkar , at an ASSOCHAM Conference in New Delhi on the 29<sup>th</sup> of June 2009.

“As I have mentioned elsewhere, it has been estimated that the GST implementation increased Canadian GDP by 1.4 percent. In India, we can expect a similar kind of positive impact. This means gains of about 15 billion dollars annually. Discounting these flows at a modest 3 percent per annum, the present value of the GST works out to about half a trillion dollars.

This is indeed a staggering sum and suggests the need for energetic action to usher in the GST regime at an early date.”

Additional GDP means additional taxes and this huge bonanza needs to be utilized in the most efficient manner to yield returns to the economy at the centre and in each state of India. We are however more bullish than the NCAER as India is different from Canada where a GDP gain of 1.4 % was seen. In our calculations we have therefore assumed a GDP gain of 1.6 % and therefore additional tax collection.

As the states will be using this money anyway , it will be far more efficient to pool 10 % of this money ( i.e US \$ 2.0 Billion Each year ) in an **Education Escrow Account** within the Education Megaproject Fund ... to immediately raise capital through a securitizing facility to part finance the project Capital investment to build the 30,000 schools planned under the programme.

While GST implementation will add US \$ 500 Billion to the economy over the years, we will be securitizing just 10 % of the additional tax collected due to widening of the tax net.

- 2. Securitizing 30 % of a proposed new 10.3 % tax on the services and labour component of Infrastructure projects.** This will be on the same lines of the 10.3 % tax on the service and labour component of housing and commercial projects that have been a part of the budget proposals in Mr. Pranab Mukherjee's Union Budget for 2010. India is going to see a projected investment of upto US \$ 1.7 Trillion in Infrastructure projects over the next 10 years. While the promoters of these projects will continue to enjoy tax holidays during the operations phase , it is justified to collect some tax on the inputs so that the nation can train the human resources necessary not just to make these projects a reality but also to train people for a next generation economy. This new service tax on Infrastructure will generate an additional revenue of US \$ 3 Billion each year for the Government and the Education Megaproject will be taking 30 % of this new tax , with the resulting cashflows being securitized and pooled for the purposes of raising money from national and international banks to finance Project Capex .
- 3. The Education Megaproject proposes to implement a suggestion made by others ( NV Varghese in " Reforming Education Financing – 1991 ) to raise upto US \$ 2 Billion each year through the levy of a Graduate Tax.**

Very briefly the idea is that India today has only **46 Million Graduates** on whose education the Indian Government has spent a lot of money. Currently , the tax is levied according to the taxpayers profession and a maximum of **Rs 2400 / year** is levied and paid to the local municipality or state government. In addition , all salaried employees pay an education cess of 2 % of their gross salary .

The fact is that these levies does not even come close to compensating the nation for the massive sums that have been spent on a persons education and in making a graduate out of him / her. Secondly , companies employing graduates are taking the full advantages of the increased productivity of these people without ploughing anything back into the system so that more people can be educated.

As an example , it costs the Indian taxpayer / Government of India over Rs 30 Lakhs to produce 1 IIT graduate and over a 50 Lakhs to produce one IIM Graduate. This does not include the huge opportunity cost of hundreds of people who cannot enter these institutions due to limited seats. The same argument applies to other professional courses.

Companies that employ these highly qualified people are getting assets for free and they generate huge profits ... but the Indian government is getting a near zero return on it's huge investments in training these people. It is therefore proposed to levy a Graduate Tax @ 3 % linked to the graduate employees salary but payable by the employer. The Tax will apply to all graduate employees on a company's rolls. Every self employed graduate in the country will also have to pay this tax linked to his declared income . Only , non working housewives and retired people will be exempt

from the levy of the tax which can potentially net the Government an additional **Rs 18,400 Crores** each year based on an average income of Rs 130,000 per graduate whose employer is then taxed at **3 %**. Assuming graduate employment in the organized sector @ 25 % we can expect a cash flow from the organized sector in the range of US \$ **1.0** Billion each year with the much larger un-organized sector including practicing independent professionals contributing another US \$ **1.0** Billion.

The New Graduate Tax will generate US \$ 2 Billion from the organized sector and independent professional sectors put together. It is thereby proposed that there be a unified rate of Graduate Tax across India instead of the various slabs in different states. The unified Graduate Tax will also fully replace the Professional Tax that is being collected today. The Education Megaproject will take US \$ 2 Billion of this cashflow which will be pooled and securitized to generate money for Capex Expenditure.

**This Tax will be payable by the employers in all cases.** Since India will be investing close to US \$ 1.7 Trillion in Infrastructure in the next 10 years, it is going to create a huge skill shortage and we therefore do not feel that employees will face the burden of this tax in their salary negotiations with employers as it will be employers who will be competing fiercely for the best people. India is therefore going to see a considerable rise in average salary levels over the next few years and since qualified people will be in extremely short supply , we believe that employers will not be averse to paying this tax that is distributive and which promotes greater social equity. The Graduate Tax can be levied for a period of 15 years on every graduate employer to recover the cost of education borne by the Indian state on the employee. Some of the tax can be used to finance higher education ( as suggested by Varghese et al, 1991 ) but most of it will go to the Education Megaproject as people spend most of their time in school .

An **Exit Tax** on students going abroad after benefiting from a highly subsidized education from IIT 's and IIM's can also be considered so that the Indian Taxpayer is at least able to recover his cost of providing education to those who leave the country. Govt. Of India needs to have a policy to recover the complete cost of education from people going abroad permanently as this represents a huge loss to the Indian State.

- 4. Levy of a 0.02 % Quantized Tobin Tax on Forex Transactions** by Indian owned Entities & by foreign entities doing business in India to raise US \$ **1.09** Billion / Year towards Project Capex .

This tax had first been suggested by the Nobel Laureate economist Prof. James Tobin to discourage short term speculation through round trip excursions into another currency. The money collected through this tax could then be used to finance social development projects.

Given that India is moving towards capital account convertibility and trading volumes will accelerate from current levels of between US \$ 10 – 15 Billion per day to US \$ 100 Billion by 2015 . It is therefore proposed to levy a tobin tax of **0.02 %** of the value of the transaction on all foreign exchange dealings by Indian entities or Indian controlled entities in any currency or any global entity doing a deal involving the Indian rupee. It would be possible to levy this tax because though the transactions get executed in markets around the world , the final clearing happens only in a few financial centres such as London and New York and a few others around the world. The idea here is not just to reduce volatility in the value of the rupee once it is made tradable on the capital account but to divert some of this money to fund social

development projects in India. On December 11, 2009, European Union leaders expressed broad support for the levy of this tax in a communiqué to the International Monetary Fund. This tax therefore has broad based support around the world and in India we need such a tax which ensures that a very small percentage of the huge wealth generated through currency transactions be utilized for development and education in remote Indian villages.

The Governor of the Indian Reserve Bank Dr. D Subbarao, had in **Dec' 2009** hinted at the possible need for policy measures, including a **Tobin Tax** to control fund flows (**US \$ 17 Billion**) into the Indian economy by FII's which had led to the appreciation of the Indian rupee by over 10% since end-March 2009, making Indian exporters uncompetitive compared to their rivals in other countries. The RBI governor stressed the need to have some kind of control on foreign fund flows that had been responsible for worsening of the Inflation situation in India, the boosting of asset prices and destruction of Indian industry's competitiveness. The governor had said that " **It is possible that the inflows will be much beyond our current account deficit. In the medium-term, it is our objective that India expand its absorptive capacity to absorb the capital flows, but in the short-term, should there be flows largely in excess of our current account deficit .... we may have to take some measures towards capital control.**"

Of the approximately **US\$ 1.7 Trillion** that are to be invested in India in the Infrastructure business over the next 10 years, if we assume that just **10 %** comes in from foreign investors it will create a huge upward pressure on the Indian Rupee and the **government may be forced to come out with a special policy which requires foreign investors to bring in their equity only in terms of material supply ( Cement, Steel, Machinery etc ) to avoid an appreciation of the Indian Rupee.** FII fund flows into the Indian Stock markets and in the currency markets will be several times this amount which will cause large inflationary pressures in India. The case for the imposition of a Tobin Tax is therefore definitely there. Taiwan, Brazil and Canada have experimented with this tax and India will most likely follow. The Education Megaproject is therefore offering itself as a user project for the **\$ 1.09 Billion** which will be collected each year at a minimum as **Tobin Tax**.

5. **School Operator Equity** : Private school operators under the terms of the BOT concession agreements will be bringing in 30 % of the 15 % of the cost of the school as their own equity. This amounts to just **4.5 %** of the cost of the school. But taken for the **US \$ 131.38 Billion** project as a whole, promoter equity contribution over a 10 year construction period will add up to **US \$ 5.66 Billion**. Please note that this money will be brought in by 30,000 different operators over a 10 year period.
6. **Utilization of Unutilized World Bank & Asian Development Bank Funds** : The World Bank and the Asian Development Bank have together sanctioned a total of **US \$ 15.6 Billion** or **Rs 70,964 crores** to India but this money is lying unutilized with these two multilateral institutions as the government of India does not have any projects to utilize these low cost funds. During 2007 – 08, The government paid a penalty of **Rs 124.54 Crores** as commitment charges on this massive un-drawn amount to the Multilateral agencies according to the Comptroller and Auditor General Of India ( **CAG** ) in its March 31, 2008 report which was tabled in Parliament. This is a huge wastage of low interest rate funds.

The World Bank / Asian Development Bank provide funds for specific projects ( Healthcare, Water/Sanitation, Education, Rural Roads, Environmental projects etc ) and it is usually difficult to reallocate this money for other than their committed sectors. However, since the Education Megaproject is an integrated development

project with sub projects in all these areas , the multilaterals would not have any problems in disbursing all the committed funds for a single large education project that includes all these areas. The most sensible thing to do would be to immediately deploy this massive corpus for the financing of the Education Megaproject which at US \$ 131.38 Billion will have a Infrastructure Investment Multiplier effect of nearly US \$ 300 Billion on the Indian Economy over the next 10 years( construction period ).

**7. Utilization of budgeted and dispersed , yet Un-Utilized funds with various ministries :**

Almost Rs 108,000 Crores is lying un-utilized with various ministries and NGO's. The CAG in its report for 2007 – 08 has said that un-utilized grants of Rs 100 Crores and above alone totalled Rs 59,000 Crores between the years 2005 – 06 and 2007 – 08. In 2007 – 08 , under 97 grants to civil ministries there was an unspent provision of Rs 108,000 crores. This money should have been returned to the consolidated Fund of India, but this was not done. **These are 2007 – 08 numbers but they are an indication of how much money is still lying un-utilized in key government departments handling social sector schemes in healthcare, education , rural development and food and public distribution.**

In 2007 – 08 , Rs 51,000 Crores was transferred under various Centrally Sponsored Schemes ( CSS ) . To make the system work more efficiently , this money bypassed the treasuries of the various state governments and was paid into the accounts of specially created state implementation societies and NGO's which cannot be audited by the CAG. In many cases, according to the GAG report, this money is lying un-utilized within these NGO's. **A recovery mechanism needs to be set up to recover this un-utilized money and put it to work in creating assets within large social development schemes such as the Education Megaproject.** The CAG needs to be specially authorized to conduct such and audit with the objective of recovering unused sums and re-deploying it to fund this project.

**8. “Urban Equity Withdrawal ” in State Owned Enterprises :** A total of US \$ 40 Billion is proposed to be raised towards project capex by applying the concept of differential FSI's to land owned by PSU's in the 4 Metros and large cities and towns across India. This form of financing gives effect to new thinking within the World Bank group on Unlocking land values in urban India ( World Bank PPIAF Policy paper No 7 , by George E Peterson ' 2009).

During the initial project execution phase , there could be a bridge financing requirement to finance the construction of the schools. Since the Indian Social Infrastructure Corporation ( ISIC ) by the sheer size of it's prime real estate holdings will be one of the worlds richest project companies / SPV's , this requirement of bridge finance will be met through equity and bond offerings which could be in the range of a US \$ 5 Billion Equity offering and a US \$ 15 Billion Global bond offering targeting a debt to equity ratio of 3 : 1 for the ISIC. The coupon rates of the 3 year bond offerings will be the lowest possible as the ISIC will have near sovereign rating.

#### **4.15 EXPLAINING URBAN EQUITY WITHDRAWAL**

While close to **US \$ 3 Trillion** can be raised by freeing the FSI in Indian cities over the next few years , the scope of the present paper is being restricted to FSI gains that can be realized within various State Owned Enterprises or Public Sector Undertakings ( PSU's ) as this can be done fastest.

Indian Government ( Central and State ) PSU's own a very considerable amount of land all over India and in her cities and towns. In Mumbai for instance PSU's own hundreds of acres of land with FSI's ranging from 1.33 to 3.5 . The value of this land alone within the city of Mumbai , is in the range of tens of Billions of US dollars. Similarly PSU's own prime real estate in New Delhi , Kolkata, Chennai , Bangalore , Hyderabad , Pune and dozens of other prominent cities and towns. The total valuation of this land at an average FSI of 2.5 itself would be worth a lot of money and enough to finance 30,000 new schools and 3000 new state of the art hospitals put together.

If the FSI on this PSU owned land is raised to an average FSI of between 12 – 16 in the 4 metros alone it could release several tens of billions of dollars for massive social development projects all over India in a manner which will ensure an equitable distribution of wealth and development in the poorest parts of the country. This is a rare opportunity and the time has come to make this happen.

A generous portion of this monetized FSI will be shared with the PSU concerned and to safeguard the commercial interests of its government and private investors and the balance FSI of between 6 – 10 will be transferred to a new umbrella organization “ The Indian Social Infrastructure Corporation ( ISIC ) “ which will be set up under an act of Parliament on lines similar to the financial institutions such as UTI or more Specifically IDFC ( Infrastructure Development Finance Corporation ). A total of **30,000 acres** of land will be transferred to the ISIC from PSU's and government departments such as the Railways , Food Corporation Of India etc and another **900,000 acres** in small towns and rural areas will be separately transferred by state governments giving the ISIC a land bank of **930,000 acres** under this scheme. Of the 30,000 acres of former PSU land in cities and large towns , 3000 acres will be prime real estate which will finance the education megaproject.

Of the 30,000 acres allocated to the Education Megaproject , 3,000 acres lying in Metros such as Mumbai , will be sold at an average cost of Rs 200 crores an acre ( This is very a conservative number given that a 1 acre plot in a city like Mumbai was sold for Rs 400 + Crores recently ) to realize **Rs. 162,470 crores** after sharing some of the money with PSU's to finance a part of the project Capital Expenditure to build the 30,000 new schools.

#### **4.15.1 ADDRESSING PSU CONCERNS**

To fully accommodate the commercial concerns of PSU's and their government and private shareholders, they will get an enhanced FSI ( either on the same plot or on their other properties that are not participating in the scheme ) . For instance if a PSU is giving away prime real estate in Mumbai city which currently has an FSI of 2.66, they will get an FSI of 4.50 in another property in the same locality ( if they own two properties close to each other and are giving away only one property) or an FSI of 6.0 in a less valuable location, in a manner that their commercial interest is protected. They could also be issued TDR's (Transfer of Development Rights) which they could trade on the market or they could receive cash for the enhanced FSI that accrues on the actual sale of their plots. So , If the plot has been granted an additional FSI of 8 , Cash equivalent of 5.5 FSI will go to the Social Infrastructure Megaprojects and a cash equivalent of 2.5 FSI will be paid in cash or issued as TDR's to the PSU after the sale of land through a transparent bidding process to Indian or International consortia , thereby avoiding any litigation from shareholders.

#### **4.16 ISIC GOVERNANCE : PROJECT EXECUTION & OPERATIONS PHASE**

The Indian Social Infrastructure Corporation ( ISIC ) has been conceived as an umbrella organization for social infrastructure within India and it will set up other social infrastructure

projects as well based on unique financing structures of which differential FSI's are just one possible instrument.

The scale of cashflows that will be handled by the ISIC needs to be monitored in a transparent manner and the Megaproject need to be open to public audit. It is therefore an explicit requirement of this project, that it be executed in a corporate setup, outside the concerned ministry , under government of India. In fact , it is better not to execute the Mega Project, than to execute it within a ministry where in-efficiencies and leakage of funds will undermine the very basis of the project and lead to huge cost and time over-runs. It needs to be clarified here that the project however will spend tens of thousands of crores of rupees on assisting existing schools, that will continue to function under the aegis of existing government entities without getting involved with actually running them and getting embroiled in their internal politics and organizational structures.

The Education Megaproject SPV will be headed by a CEO whose appointment and standing will be the same as that of a Chief Election Commissioner. The executive board of the SPV will have the Minister of HRD, The Chairman of the National Knowledge Commission, The Secretary , Ministry of HRD, the Deputy Chairman of the Planning Commission and the education secretaries of all the 28 states as members so that the interests of all the states are protected. The Prime Minister will be the honorary Chairman of the SPV's board.

Since the project has an innovative and completely independent financing mechanism it will therefore not hinder in any way any other previously running or currently planned scheme of the Government of India. This will instead be an add-on umbrella scheme that will greatly strengthen current government initiatives and will create an incentive for the whole system to achieve higher levels of efficiency than what is being hoped for at the present time.

#### **4.17 REAL ESTATE ISSUES**

The total quantum of land involved in the project ( Phases I, II & III together ) is **930,000 Acres** across different states and union territories all over India. Of this, **30,000 acres** will be land owned by Public Sector Undertakings in Metros and large cities and towns. The other **900,000 acres** will be land committed by various state governments in villages and small towns where the 30,000 new hub schools will be built. If in certain places in the country, government does not own land, the land for the school or hospital will be bought outright with cash and paid for by the **ISIC** which by virtue of being the biggest landowner in the country will have huge resources. In this way coverage all across India will be assured.

930,000 Acres might look like a huge amount of land but it is not. Actually , 930,000 Acres, can be visualized approximately as a strip of land **62 Km** by **60 Km**. It is not much land for India taken as a whole. All of this land will be transferred to the Indian Social Infrastructure Corporation after arranging for due compensation and allowing the erstwhile PSU owners to participate in some of the upside from the future use of the land.

The Education Megaproject SPV will then cherry pick **10 %** of this 30,000 acre land bank to Finance **30 %** of the Capex of the Primary & Secondary Education Project . The balance **90 %** land will be given on rent / lease to commercial organizations in towns and cities so as to earn a yearly cash annuity to meet respective project Operating Cash Requirement and to subsidize Education to Low Income Groups.

All sales of land under the above arrangement will be in accordance with a transparent bidding process and **ISIC** land sold will have an FSI ranging from 8 - 16 for the creation of

essential Urban and financial Infrastructure in major towns and cities . Thereby maximizing development of scarce land as also available funding for the project.

#### **4.17.1 FSI ENHANCEMENT TO LEAD TO RE-ZONING AND MEGA URBAN DEVELOPMENT PROJECTS**

The enhancing of FSI's in Indian Cities as described in this note is going to result in huge Urban development opportunities in India. I believe that the time for this is NOW. The raising of this money and the execution of the Education project however does not need to wait for the process of re-zoning of major cities to be taken up. In fact the land auctions of PSU land with enhanced FSI's can proceed immediately.

India is entering an era of Mega civil engineering projects. It is better to get used to this way of doing things on a large scale than to begin endless arguments as has been the traditional Indian way of doing things for the last 60 years. Enhancing FSI requires increased Infrastructure support in terms of city amenities and better municipal infrastructure. This will be incorporated into each city's new development plan ... There is a need for new thinking ... and the time is NOW.

#### **4.18 ISIC VALUATION & ADDITIONAL FUND RAISING**

Going by the value of recent land deals in Mumbai where one acre has fetched upto Rs 400 Crores , the value of the 10 % of 30,000 acres ( 3000 Acres ) transferred to the ISIC in cities and towns across India will be worth a lot of money even at a low FSI of 2.5. However on a very conservative basis if we assume that the average cost of land in a Metro is taken at Rs 200 Crores per acre, the value of the 3000 acres cherry picked land out of the 30,000 acres transferred to the Indian Social Infrastructure Corporation will be approximately Rs. 600,000 crores.

This land bank will make the ISIC one of the highest net worth companies on the global Stock Exchanges. It will then be possible for the various SPV's within the ISIC to raise their own resources by selling land ( Through a competitive and transparent bidding process ) to developers or by issuing long term tax free bonds on par with RBI bonds.

Since the money available under this structure is virtually unlimited , the same structural vehicle / arrangement can be used to finance higher education in India where again a teacher centric model needs to be employed. [This subject will be covered in a separate note, later in 2010, to the Planning Commission / NKC.](#)

#### **4.18.1 FINANCING : OPERATIONS PHASE**

This project has been conceptualized keeping in mind the human resource needs of a **US \$ 4.5 Trillion** economy in 2025. When we plan for that kind of scale we need to think in futuristic terms in terms of possibilities , with the understanding that we will negotiate the problems we encounter when we come to them. Let us not cloud our thinking with problems.

Secondly , we need to understand that of all capital expenditures on a sectoral basis, Capex incurred by a nation on education is **least inflationary** for the economy compared to all other possible avenues of investment. This is because education increases productivity and demand. All it requires is for us to have a little more faith in ourselves as Indians. Right now, the Nataraja foundation is a " Majority Of One " in believing that this project is do-able. Just imagine what will be possible if we are joined by a just a few other determined people.

The system of 30,000 new schools to be set up together with its network of 420,000 assisted existing schools ( through a teacher sharing programme ) will incur an operations expenditure of approximately **US \$ 45 Billion each year.**

The question is “ How do you raise so much money each year “ ?

The schematic below shows how this money will be raised. The key thing to remember is that as the system grows , Indian GDP will also be increasing in a manner that will entirely support it and by the time the system is fully operational in 2025 , the size of the Indian economy will be **US \$ 4.5 Trillion.**

First , we will look at whether we can use some of the annuities that were used in the construction phase. The following are the possibilities that will together provide **US \$ 17.86 Billion** each year :

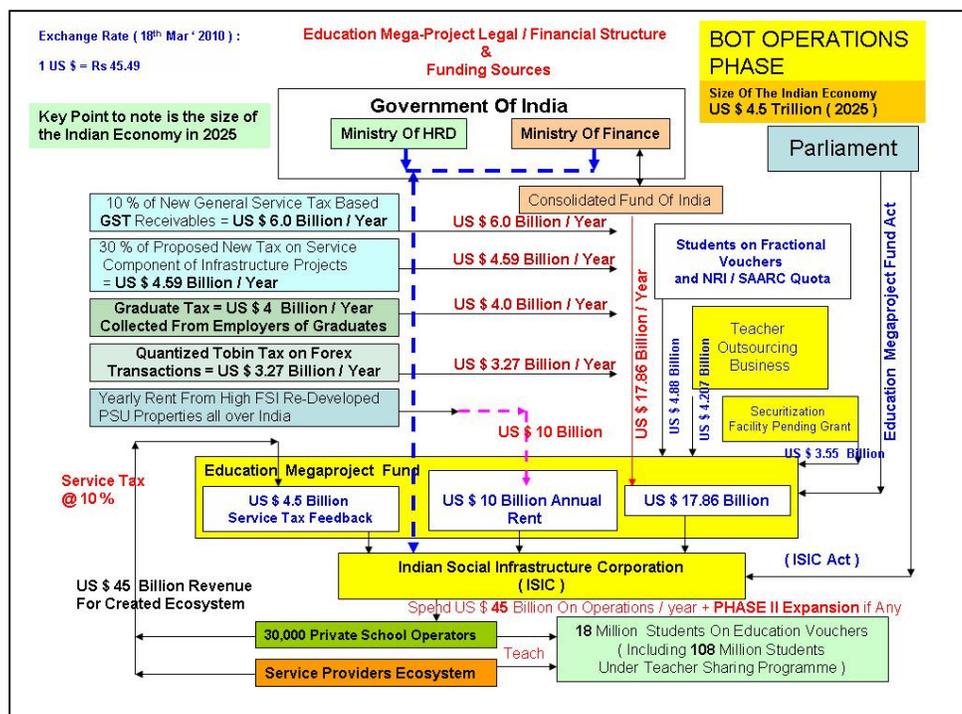
6. 10 % of GST receivables ...
7. 30 % of Tax on service components of Infrastructure projects
8. Graduate Tax payable by employers
9. Quantized Tobin Tax
10. Yearly rent from re-developed PSU properties in partnership with leading Real estate developers

Secondly , three new revenue streams will come in to add another **US \$ 13.01 Billion** to the cashflow . These revenue streams are :

6. Indian Students on fractional vouchers and NRI / SAARC children quota
7. Teacher outsourcing business
8. 10 % service tax feedback from newly created service provider ecosystem

Thirdly , a balancing number of **US \$ 3.55 Billion** will be provided by the government of India which will now have a budget that is three times larger. It is not such a large number given that the size of the economy in 2025.

**Fig 2 : Source of Funds ( Operations Phase )**



The first four of the above sources need not be explained in detail as they have been explained before . The only thing to remember while examining “ Operations Phase Financing “ is the size of the Indian economy in **2025** wherein the collections would have tripled. The number of graduates would also have increased as India as there will be a considerable increase in the number of Indian graduates given the current reforms being considered by the government in higher education and the number of foreign universities that will set up shop in India by 2023.

Items 5 – 8 above need to be explained and we will do so now :

**Item 5 : Rent from former PSU properties ...** Readers may recollect that only 3000 acres out of the 30,000 Acres of land bank would have been sold during the construction phase to raise US \$ 40 Billion to part finance the building of the schools.

It is envisaged that the Indian Social Infrastructure Corporation ( ISIC ) will serve as the cornerstone of an Indian urban equity withdrawal programme that will move wealth from large Indian cities to the rural countryside in a very coordinated manner.

Under the proposed plan, It is envisaged that the **ISIC** will enter into a 50 :50 partnership with leading real estate companies and project developers from India and around the world. The ISIC will provide the land and the developer will develop commercial and residential space in large Indian metros and large towns . A total of 10,000 acres of real estate will be developed at FSI's ranging from 8 – 16 to provide a yearly annuity of **US \$ 10 Billion** to the ISIC for a period of 25 years. The exact terms of the contracts with large developers will be decided by the ISIC after incorporation when it will have it's own staff as described later in this document.

Another 17,000 Acres of land will be set aside for a separate and massive Rural Healthcare project which will be built by the ISIC under a separate SPV. This project is currently under development and will be sent to the planning commission and the ministry of health and family welfare sometime early in 2011.

India currently needs another **200 New Green Towns** with a capacity to house one million people each. Given the experience gained in Urban Equity withdrawal within this project it is envisaged that the **ISIC** will be given additional government land to set up these towns in collaboration with the worlds leading developers. This will provide additional revenue and add to the valuation of the ISIC on stock exchanges around the world after it goes public in India. The staffing of the ISIC will be in accordance with this long term plan.

**Item 6 : Students on fractional vouchers and NRI / SAARC children quota ...** The education megaproject is focused on economically weaker sections of our society and 70 % of the children enrolled in the schools will come from economically weaker sections.

This however does not mean that the upper middle class and the rich cannot get admission to the excellent schools that will be set up. As mentioned later in this note , even children from the richer sections of society will enjoy a subsidized education but they will have to pay **1/ 3<sup>rd</sup>** of the fees. Since the vouchers will be worth Rs 101,400 for day schools and Rs 129,500 for residential schools , the more economically well off will be required to pay **1/3<sup>rd</sup>** of this amount. In addition SAARC students will be admitted to at the full fee and NRI's foreign students will need to pay double the value of a voucher and still it will be cheaper than studying in a private school in the United States for example for NRI students. The NRI / SAARC quote however will be just **3 %** . A majority of the **US \$ 4.88 Billion** will come from Indian students on fractional vouchers and we do not see any problem with demand at the yearly fees ( **1/3<sup>rd</sup>** of voucher amount ) mentioned above for day schools and residential schools.

**Item 7 : Teacher Outsourcing Business ...** Currently teachers in India function in a highly restrictive environment. They have a considerable amount of free time but they are not able to utilize this free time properly and grow in their careers. Instead they are forced by the government to take on duties like election monitoring and taking of the census.

The Education Megaproject looks at teachers as highly productive and creative people and seeks to allow for the development of primary and secondary school teachers to the full extent that is humanly possible. We do not wish teachers to feel that they are stuck in dead end jobs. With this in mind the project also has a huge graduate programme for existing teachers in government jobs , to enable them to upgrade their skills so that they fit into the expanding new infrastructure.

All the **1.74 Million teachers** within the Education Megaproject will be on a 5 year contract. This contract however will be highly flexible and will allow for the establishment of teacher working groups where teachers will be able to be entrepreneur professionals. We have identified 2 possible areas where teachers can be very active :

3. Creation of creative teaching content for the global markets by entering into business arrangements with schools in foreign countries and within India. The education megaproject will provide all the infrastructure and communication needs to facilitate this. The only condition being that teacher groups will need to share their earnings with the ISIC in the ration 60 : 40 with 60 % of the revenue going to teachers.
4. There will also be a provision under which teachers will be allowed to go on teacher exchange programmes to foreign countries where huge shortages in trained teachers exist. In a school with 300 students and 58 teachers , it is envisaged that up to **5** teachers at any given point in time will be on a foreign assignment.

These two programmes will greatly help to attract the best people to careers in teaching and at the same time allow for considerable growth of teachers as professionals. Teachers will also earn a lot more than they are earning today. In the above it is being assumed that each teacher has the potential to earn an additional Rs 5,50,000 in the aggregate each year. It is estimated that the teacher outsourcing business will add close to **US \$ 4.207 billion** each year as a funding source for the project considering a **40 %** share of revenues to the ISIC.

**Item 8 : A 10 % service tax feedback ...** The huge primary and secondary school network that is proposed to be set up will be creating an ecosystem where **US \$ 45 Billion** will be transacted each year at a minimum.

Thousands of information and learning content providers and service companies will be created to serve millions of children in India and around the world. All this means more tax to the government of India. If service tax is levied at the rate of 10 % , it will imply a feedback of **US \$ 4.5 Billion** to government coffers. We have taken this money in as a feedback to re-finance the project's operations.

After accounting for all the above inflows , we still are falling short of US \$ 3.55 Billion. This we have currently designated as a grant which govt of India will need to provide. We do not see a problem with this as the Indian economy would have grown considerably by **2025** and government of India will be in a position to easily provide the funds without any financial impact on it's other schemes.

There is a need to make a small point about operations expenditures here. In the operations phase the schools will operate very differently on the expenditure side from the current system under which the Sarva Shiksha Abhiyan ( SSA ) operates. Under the megaproject,

schools will be completely free to outsource procurement of goods and services and a lot of the expenditure they will incur will be paid to private vendors. While school operators will have considerable autonomy in spending money, they will be required under the terms of the concession documents to publish a yearly report on budgets plans and actual expenditure incurred on the Context based communication system's open database platform. This will have two very important effects :

1. It will help compare the financial performance of the 30,000 schools on various parameters ... thereby serving as a natural check on funds leakage
2. Since the amount received from the ISIC under the educational voucher system is fixed and **not cost plus**, it will encourage innovation in procurement of goods and services and introduce competition between vendors supplying to the schools ... all of which will greatly reduce costs and check corruption.

#### **4.19 PROJECT RAMP UP FINANCING**

The project will have a 13 year ramp up phase from **2011** to **2023** during which the system will be rolled out starting from the pilot projects. The total operations financing requirement of this period is **US \$ 167.25 Billion**. For the purpose of developing a robust financing strategy for this period, the ramp up phase has been divided into two periods. In the first period 2011 – 2017, the total operations cash requirement is **US \$ 31.78 Billion**. To meet this cash requirement, it is proposed to sell an additional 2000 acres of land, that is a part of the ISIC's land bank in various metros and to buttress this with a small percentage of cash from the sale of strategic stakes in various PSU's and government owned banks. In addition the surplus money that has been raised during the construction phase and considerable surpluses generated from our operations phase financial structure will be more than enough to meet the needs of the first period.

In the second period of the ramp up phase ( 2018 – 2022 ), the operations financing needs increase considerably. This period will have a cash requirement of **US \$ 135.47 Billion** in the aggregate. We believe that there will be no problem with raising this money as given an **8 %** sustained growth rate, the incremental cash flows from the annuities will allow a phase of securitization wherein another **US \$ 25 Billion** can be raised from national and international banks. There will also be enough free cash flow generated the sale of additional land in the land bank ( another 3000 acres of PSU land from the balance 15000 acres ) and a considerable sum will also come in from the sale of concessions to set up **200** mini city development projects / Green cities that are set up to reduce migration to large metros. We are therefore not seeing any problems in raising capital if the proper policy decisions are taken. The only limiting issue is our imagination and our commitment to see this project achieve it's targeted completion date of Dec 2023.

It is important that project milestones be met as specified so as to avoid cost overruns during the execution phase. Proper planning is therefore of vital importance as is the use of a context based communications system / IT platform that will keep a firm lid on costs. It is vital that a robust communications platform be used for project control.

#### **4.20 PROJECT TARGETING & VOCATIONAL TRAINING**

School dropout rates in India are extremely high as the planning commission data clearly shows. The Sarva Shiksha Abhiyan has not been able to do anything concrete about this and we will have around **100 + million** “ **literate** “ teenagers in India by 2018 **without any employable skills**.

The Education Megaproject has therefore been designed in such a way that it allows for local demographic targeting based on local market needs to train children and teenagers with skills, specific to the needs of the local economy. This local economy focus is critical , otherwise these 100 + Million teenagers will land up in cities and small towns and create huge slums with its associated law and order problems. So local demographic targeting flexibility is a key design parameter within the Nataraja Vocational Training programme.

Since most of the learning takes place in the class V to class XII range , and most of the dropouts are happening in the class IV to class VIII range , the education megaproject has a sort of **Mid-Stream targeting focus**. This can be fine tuned at the time of giving the schools out of bids in various village clusters and towns across India.

If a certain village cluster has more post primary students and teenagers then the local school will have more focus on skill building and less of a primary education focus. All the parameters will then be specified after a local study is carried out and specified in the bid documents. In this way the schools will differ very greatly from SSA schools that are extremely norm based. We believe local market focus is critical in India given our huge demographic diversity. In all cases students at all age groups will be taught to read and write and they will be brought up to speed through the creation of age group focused content . **It is also best that all this be left to the local operator who wins the bid for the setting up of the school. Government should have a minimum regulatory role to play. Let us not throw too much government at a problem that does not need the government.**

Under the Education Megaproject , local market forces will dictate the content of the vocational syllabus and the courses on offer. Government's role will then be restricted to the creation of sound policy and on the creation of robust rules that allow the development of a local ecosystem. For instance if food and agriculture is the predominant local industry then the creation of skills suited to agriculture and food processing will be the focus of the local school. If mining is the predominant local industry then the **skill building focus** will be on Mining and allied support industries. In all cases however secular and other subjects will be taught.

As stated earlier, the project has the necessary flexibility to be specifically targeted at the age group 9 – 18 years or for school grades / classes IV to XII because the maximum learning takes place in this period **or** it can take a child in at the standard I and look after him / her till class XII . If the government chooses the Class IV to Class XII band , then the project will lift the children just as they are getting out of the current Government schemes that target children in the age group 6 – 14 years. **The Nataraja Foundation recommends this approach as we have a huge gap in upper primary and secondary education in India.** Since the project provides a considerable improvement over the existing schemes of the government, it creates a huge pull factor within the education system both for teachers and for students by providing enhanced opportunities for both.

For teachers it provides hope of transitioning to vastly improved career prospects and a better lifestyle and for students, the **18 Million Education Vouchers** that will be available will provide for the best possible learning for the more academically inclined. The aptitude test will be open to all children in India , including 70 – 80 % of whom have rural backgrounds and this will ensure social justice and proper economic targeting of the scheme without resorting to outdated concepts such as reservations . **In fact after 15 years with this system, India will be able to totally do away with the system of reservations for college admissions and within 20 years for job reservations.** **The Education voucher system therefore will have a huge social upliftment impact as well as it provides a means for the complete removal of caste based distinctions.** Most importantly the Mega Project will also assist existing schools through its teacher sharing programme wherein approximately 420,000 additional schools will receive the best possible teaching inputs and Vocational Training. It is important to state

here that teacher sharing is a much better method to bring about vast change than for the Megaproject to directly run the schools with which the teaching resources are shared. This is because local politics will influence outcomes and **it is therefore very important that no attempt is made to try to run assisted schools.** This system will work very well if assistance is given from the outside without entering local politics within existing village schools and the gram panchayats. The teacher and content sharing programme will be assisted through the deployment of 12 Edusat Satellites and 400,000 Km of Fiber Optic Cables that are already in the ground. The megaproject will also provide for 420,000 guest houses and thousands of mobile vans to make teacher sharing logistics less onerous.

#### 4.21 TEACHER ABSENTEEISM

Teacher absenteeism is a major problem in Indian schools. A World Bank study ( Kremer et al ' 2004 ) found that the teacher absence rate in India on average is 25 %. This was the highest absentee rate in a sample of 8 countries covered by the World Bank survey. Only Uganda fared worse with a 27 % absentee rate amongst teachers.

In most states in India, teachers are the single largest group within the civil service , so their special interest groups command considerable political power . **No action can therefore be taken against teachers who absent themselves from their schools for between 90 – 100 days in a year.** The silent sufferers of this unprofessional behaviour are tens of millions of children and their parents who have no-where to go and complain. A major finding of the studies however is that although government teachers are better paid and trained, absenteeism is very high among them and that it is the **para teachers** ( Teachers on contract ) that do most of the work. It is no wonder therefore that the special interest groups that claim to represent teachers are very much opposed to the government going in for Para Teachers.

Various focussed group discussions have dwelled on the issue of teacher accountability and it has been repeatedly stated that predominant among special interest group list of demands the issue of teacher salaries and benefits. The focussed group discussions have therefore suggested ( Santosh Mehrotra ' 2006 ) that each state must adopt a teachers code of professional ethics, administered by a general teachers council ( with some teacher representation ) with power to issue sanctions against teachers violating the code. Further teachers are the only government employees allowed to contest elections and become MLA's and several teachers have been elected to the legislative assemblies from reserved constituencies after which they continue to draw their salaries as teachers. This goes on even if they win the next election as well. There needs to be an amendment to the law which forbids this kind of behaviour. **All this shows that the latitude given by the constitution has been grossly misused** by people who have no sense of responsibility towards the millions of poor children and their parents in villages across India , who have to suffer in silence when teachers do not show up for work for 25 % of the working year.

The Education Megaproject has been conceived as a “ **Teacher Centric** “ project with the objective of attracting the best minds to careers in teaching by offering them higher salaries and a lifestyle that is amongst the best possible on a global basis. However , the issue of teacher absenteeism needs to be resolved if we are to save our children from uncaring and unprofessional practices by errant teachers who are protected against any action by various special interest groups.

These issues have been taken into consideration while designing the project and the following criteria are now incorporated into the design to protect the interests of over **100 million** children and their families :

1. None of the 1.74 million teachers within the 30,000 schools comprising the education megaproject will be allowed to belong to any special interest group. In fact this will be a crucial clause in the standard 5 year contracts that each of them must sign.
2. If a teacher stands for election he will cease to draw a salary from the school. They will however be permitted to be on leave as long as they continue to be MLA's / MP's.
3. No member / members of any special interest group will be allowed to be a partner in a bid for a school project under any of the 3 bidding rounds. If anyone is found violating this code , the concession won by the operator consortium will be terminated.
4. The Education Megaproject will specify a standard 5 year renewable contract which will be very teacher friendly and which will allow for maximum career growth in terms of foreign postings on teacher exchange programmes and for the creation of educational content for the Indian and global by participating in corporate projects. We assume that almost 50 % of the teachers within the Megaproject will take part in these schemes which will yield them an additional income of several lakhs of rupees each year. In addition on completion of 3 successful 5 year contracts , teachers will become eligible for excellent retirement benefits which will include a free house of 1200 sq ft on retirement and free medical attention to the teacher and her / his dependents.

Various studies by experts have suggested appointing Para Teachers to expand the education initiative in India as this has several advantages , the most important is teacher accountability. The Education Megaproject accepts this recommendation and it's implementation as is the practice in over 24 countries around the world.

#### 4.22 PROJECT GDP IMPACT

This project has been conceptualized keeping in view the human resource needs of the Indian economy which would have grown in GDP terms from US \$ 1.3 Trillion currently to US \$ 4.5 Trillion by 2025 based not just on planned infrastructure investments of US \$ 1.7 Trillion and its associated Infrastructure Investment Multipliers but also on the huge growth that is expected in consumption and production and exports over the next 15 years.

As stated earlier, the Primary and Secondary Education Megaproject , will involve an expenditure of approximately US \$ 131.38 Billion as capex over an 11 year period extending from 2012 to 2023.

This number is however small compared to the huge Infrastructure Investment Multiplier effect of US \$ 300 Billion ( **net addition** ) that the project will have on the Indian Economy due to it's associated construction activity alone. This estimate does not include the Economic and National dividend in terms of increased productivity and the excellent value system that it will deliver to the masses of India by 2030 , the year in which this project will being to make it's very significant presence felt in every home in the country.

The Government of India , The National Knowledge Commission and the Planning Commission as well as the various state governments are therefore urged to give this project serious consideration and to say “ **yes** ” to committing the **very minimal** initial sums that will be required for the setting up of the **70** Pilot Projects . In addition several more rural teachers training institutes and artisans training institutes will be required. This is important because these facilities are “ conditions precedent “ and therefore required to bootstrap this project and to meet a very aggressive project schedule that is planned.

India is entering a phase of Mega Projects. We have the engineering and project management skills necessary to commission projects of large size. Let us not set limits on our imagination as to what can be achieved in physical project terms.

This project is built on three foundations or pillars which are critical to its success and the continued demographic stability of India :

1. Teacher Centric Design
2. Its religious inclusiveness as enshrined in its expansive philosophy spelled out by Swami Vivekanand
3. Its Contextual Communications IT Platform to dramatically improve project efficiency

**It is also advised that the project be executed in a corporate setup outside the government of India and specifically the ministry of HRD for reasons mentioned earlier.**

To ensure speed of execution and to minimize time spent on architectural design and therefore project cost , 6 Architectural designs will be standardized for execution . On winning a bid to set up a school , a schools management just has to choose a design which will then be executed by trained masons supplied by the masons cooperatives. The vernacular designs will be the best in their class on a global basis and their adoption at **30,000** hub school locations all over India + another **420,000** locations ( teacher guesthouses under the teacher sharing programme ) is expected to change the face of Indian Rural Architecture over the next **20 – 30** years.

The Education Megaproject, described in the preceding pages, is focused on providing a sound basic education as it is more important to have a sound education at the primary and secondary levels for a majority of our people than to spend billions of dollars on higher education and have most of those students going abroad. The project therefore , as designed, and in its current form, delivers on all major recommendations made by the National Knowledge Commission in its **3<sup>rd</sup> February ‘ 2008** report to the Govt. Of India in the matter of School Education.

The project concentrates on elementary education and extends into the higher secondary level. Its benefits are not confined to the children going to school but on society and the economy as a whole according to Mr. Jandhyala B G Tilak. The contribution of the Education Megaproject will therefore not be restricted to economic returns only. It will have a significant effect on reduction of poverty and improvement on income distribution, improvement in health and the nutritional status of the population.

The execution of the Education Megaproject will have a negative relationship to fertility and population growth and positive association with family planning methods , and its positive relationship with general social, political and economic development and overall quality of life make this the most desirable of projects to be put into execution mode. Let us therefore hasten to execute this project which has the potential to once again bring back the golden age in India.

Finally , The current planning within government provides for the expenditure of approximately **170,000** Crores over a **5** year period to give effect to the RTE Act. As previously discussed , since most of the money will be spent on revenue items such as teachers salaries , there will be nothing left for building the new schools without which the plan is simply unsustainable. The Education Megaproject is therefore a much more robust plan as its teacher centric design provides a sustainable and far more efficient solution for the next **100** years.

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**EDUCATION MEGAPROJECT PPP FORMAT**

**The section describes the PPP Format and the rules under which 500 Teachers Training Institutes, 120 Masons Training Institutes and 30,000 New Schools will be given out on bidding under the Project Documents**

## 5.0 EDUCATION MEGAPROJECT PPP FORMAT

This section lays down the basic concepts of the new Public Private Partnership format that is being proposed for schools in India . It's purpose is to establish principals of equity and make the following very desirable outcomes possible :

- Lower the entry barriers to a level where people with an actual interest in education but will little resources can participate in a bidding round and have a fair chance of winning.
- Discourage lumpen elements and other un-desirable interests out of the core area of education.
- Put in place a strict set of rules whereby the system can run with minimum regulation. A one page rulebook on the lines of the American constitution which is just 15 pages ( The original was just 4 pages ) is therefore prescribed.
- Encourage the development of Vernacular Architecture and traditional construction technologies in the country with the objective of vastly improving the elegance of building construction at the village and small town level and at the same time spreading knowledge in low cost , environmental friendly construction technologies and providing employment to **10 – 20** million rural youth.

### 5.1 BOT CONCESSION CONCEPTS :

Public – Private partnerships in education are crucial to the objective of de-centralization and accountability within the Indian School System. The 30,000 new schools that are proposed here will therefore all be under the BOT regime.

Since education is a subject under the concurrent list of the constitution, The central government will consult the state governments before finalizing the model BOT concession agreement. A project consultant will be hired to prepare the model concession agreement by consulting all concerned parties. To ensure uniformity, there will be just **1** model concession agreement for all the 30,000 schools across all 28 states and 7 Union Territories. **The Indian Social Infrastructure Corporation (ISIC)** created under an act of Parliament ( mentioned earlier ) will be the nodal agency and concessionaire for award of the concessions. The state governments will be committing the required land to the ISIC in their respective states.

Parliament will also enact another legislation “ **The Indian Education Megaproject Fund Act** “ which will set up a statutory fund “ **The Education Megaproject Fund** “ to receive special cash flow streams coming from **8** different sources and commit these cash flows to provide **85 %** of the cost of building the schools and **100 %** of the cost of operating the schools ( through a system of **18** million education vouchers ) together with a large teacher sharing programme. Included in the government provided education vouchers above will be a decent rate of return to the school operators.

All schools built under the plan will have an initial concession period of **15** years after which the performance of their managements will be evaluated and the BOT concession will either naturally terminate **or** will be allowed to continue under a BOO framework. Individuals and institutions wishing to set up schools will be required to bid for the project for which there will

be certain biddable criteria. The winning party will receive land free of all encumbrances as well as all clearances & permits from state and federal government authorities including educational boards along with the project specifications immediately after the winning bids are notified. This procedure will do away with the current in-efficient and time consuming process of multiple clearances and associated lack of transparency.

The BOT scheme in the operations phase will be governed in accordance with a 1 page rulebook (described below ) which seeks to ensure that genuine parties with an interest in education get an opportunity to run schools while at the same time , crucially to prevent , unscrupulous elements from using the scheme as a means of grabbing land. The BOT rules in this regard will be **quite strict and very clear on land use** and violation of any of the rules will result in termination of the concession.

Each winning bidder for a school project will be required to strictly implement a **teacher sharing programme** which will cover **14** additional schools located within a 50 Km radius. This is a crucial requirement of the Education Megaproject. The Schools have been specifically been overstaffed by design and funds have specially been provided to make this possible .

The Voucher system is central to the concept of the BOT framework that is being proposed. A total of **18 million vouchers** will be issued under the Education Megaproject. These vouchers will have 2 face values depending on the school type :

1. Day Schools : Rs 101,400
2. Residential Schools : Rs 129,500

The vouchers will mandate that certain norms be followed in the provision of services to the students and their parents . The quality of services will be clearly specified. The voucher value will also include a service charge per child which will be given to the schools. This will be in addition to the guaranteed return on equity of 20 % which is due to the school operator each year during the concession period. **In no case will money be paid to the students or to their families.**

The following are some of the other key features of the PPP format that is proposed :

1. The BOT concession for the Primary & Secondary Schools will be given with all necessary clearances and professional affiliations in a single window. If a promoter group / concession awardee fails to meet certain transparent criteria ( specified in a 1 page rule book ), the concession will be terminated and offered to a new developer ... there will be no appeal to any court and the 1 page rulebook will be very clear on concession termination issues.
2. Under the plan, school projects will be offered out on bids to the general public. To ensure that a proper value system is maintained and to keep out unscrupulous promoters, each bidder for a school project will need to have any two of the following categories of people on the governing board :
  - A Vice Chancellor
  - 2 Senior retired teachers / Educationists with over 20 years of teaching experience
  - 2 Retired senior defence officers / Judges etc
  - 2 Well known public personalities from any profession

5. In all cases ( 2 above ) the individuals concerned must have a clean track record with no history of wrongdoing. This will ensure the necessary level of integrity to the schools and this needs to be made a mandatory requirement of the project under the BOT concession document. In addition certain social criteria / social goals will also be biddable items under the project criteria and organizations such as the **TATA Institute of Social Sciences** could be roped in to develop transparent social criteria as biddable items and therefore deliverables from the school concessionaire.
6. As stated earlier, each of the 30,000 schools constructed under the programme will be required under the terms of the BOT concession document to share their teaching resources with 14 other schools in their area. The concept here is borrowed from the experience of our former president Dr. APJ Abdul Kalam. He did not have the best living facilities but he did have access to a great teacher who inspired him.

If the management board of a school fails to share its teaching resources with 14 other schools ( after winning the concession ) , the concession will be withdrawn and the school will immediately be transferred to another bidder or to the State Government / Central Government. This is because the schools formats have been overstaffed by design to enable the teacher sharing scheme which is being specifically funded by the ISIC / SPV.

## 5.2 PRINCIPAL QUALIFYING / BIDDING RELATED ISSUES :

1. Indian Ownership Of Schools : To safeguard the national interest , while foreign entities are welcome to participate in these schools, the control of the schools will vest with Indian nationals.

Under special circumstances however , Non Resident Indians ( NRI's ) with a proven interest in education will be allowed to bid for up to a Maximum of 5 schools in each of the three , school building phases. Similar restrictions will apply for the bootstrapping phases for the creation of project enabling infrastructure ,which includes teachers training institutes and masons training institutes. NRI's however will need to bring in **Rs 10 Crores** for each school and their concessions could be on a BOO basis from the beginning.

2. To protect India's secular framework and to ensure that all the citizens of India develop a good understanding and acceptance of other religions and faiths, Religious organizations wanting to set up schools under the scheme will be required under the project documents to provide a reasonable exposure to the scriptures of all religions to their students. The ideas in The Guru Granth Sahib, The Bible , The Koran, The Geeta , The Avesta, and the other religious texts will all be required to be discussed equally in the schools and electives will be offered in these subjects which could be taught by priests from all these religions.

We need more religious understanding and more acceptance among our children if we are to prevent riots and other such incidents in a world that is turning increasingly violent. **We are having riots in India today because people have not understood the essential message that all paths lead to the same goal. Huge damage is being done to our communal fabric in India by not teaching the essential oneness of all religions.** If this is allowed on a large scale, the whole of India will become a living hell and possibly the most dangerous place on earth. We must therefore expose our children to good ideas from all religions and it is

for this purpose alone that Vivekanand's extremely broad views on religious inclusion in education has become the project design basis document.

3. Schools are social Infrastructure Projects. In this case the Indian Social Infrastructure Corporation ( ISIC ) will also be providing huge subsidies for both building of the schools as well as for running them. It will therefore be improper to judge bids on financial criteria alone. With this in mind, It is proposed that the National Knowledge Commission engages with Social Organizations such as the TATA institute of Social Sciences to devise a set of Social Criteria / Required Social Dividend ( RSD ) for the evaluation of bids received from Interested parties in the bidding rounds.
4. Each of the schools will be given land free of cost by the ISIC for an initial period of **15** years. Therefore to prevent the project from de-generating into a Land Grab opportunity for un-scrupulous promoters the following rules will be introduced :
  - There will be no other construction allowed on school land except for school buildings.
  - Winning bidders will not be able to divert school land for any other purposes other than those permitted under the concession documents.
5. In addition , No corporate house and no other party with the same promoter set ( even **1** common promoter ) will be permitted to bid for and later operate more than 50 schools under all the three phases of the project put together.
7. No special interest group representing teachers will be allowed to bid for projects under any of the bidding rounds. In addition all the 1.74 million teachers will be on 5 year renewable contracts with the schools on generous terms. This is being done to ensure teacher accountability which is currently very low in India where teachers on permanent jobs bunk school for 25 % of the working year. It is a fact that on average village teachers in most states attend a maximum of 188 days in a year. This measure is therefore being introduced to protect student and parent interests.

The objectives of the Public Private Partnership project are two fold. The first is to encourage greater community and teacher participation in the project and the second is to encourage more diversity and to help people with a genuine interest in education but without enough resources to enter the field of education. **This is a most important objective.**

With this in mind , over **85** % of the project cost will be contributed by the Government owned ISIC . Some of this money will be provided to start up the project and then progressively as certain specified project commissioning milestones are achieved more cash advances will be given to complete the construction.

To prevent this money from being diverted elsewhere within the businesses of the promoters ( if they are business people / entities ) , the **ISIC** will be re-imbursing their Project Capex related costs only on completion of specified project milestones. In this respect, Corporate concession documents will be different from Individual / Community operated concessions. This is being done to ensure that money is available first to those promoters who need it the most to get their projects off the ground.

Also it needs to be understood very clearly that community participation in schools under the education megaproject does not mean that the schools will be run by the gram panchayats or the local village council of elders. The schools will in all cases be run by the concessionaire for 15 years under a proper legal mandate from the government of India. It is expected that the concessionaire as part of the community, will be having a cordial relationship with the local panchayats and all communities including the lowest castes. To do their job well however it is necessary to keep village politics out of education otherwise the lowest castes, the harijans will never get a chance to attend school and get an education. It will be a good idea in this regard to locate schools and provide land for them in the middle of the low caste areas which the higher castes can then send their children to. This will be equitable and the purpose of social justice will be served.

### 5.3 INDIVIDUAL SCHOOLS BIDDING CRITERIA & THE 1 PAGE RULEBOOK

There is a need to protect this project from being high jacked by vested commercial interests who will seek to profit from the large sums of money involved. Any structure that is conceived therefore must protect project cash flows from un-scrupulous operators and land grabbers who will seek to grab as much of the **9,00,000** Acres of land that will be put out on bids for the purpose of setting up 30,000 new schools all over India.

Secondly ...

India is a secular state and by secular we mean freedom for all people to practice and propagate the religion of their choice, free from any kind of pressure or threat from any other religious or political group. Secularism is at the core of our constitution and the upholding of this spirit is critical to the future of India. There is therefore a need for very sound policies and a broad minded and advanced philosophy that seeks to build an inclusive society.

It is for this reason that the Inclusive and highly advanced philosophy for Education propounded by Swami Vivekananda has been adopted as the projects design basis. This philosophy, recognizes and welcomes the fact that India is a pluralistic society and it seeks to ensure that every human being whether Christian, Hindu, Muslim, Parsee or Sikh is able to realize and propagate his or her own ideal within their own religion or faith.

With the above two objectives of maintaining financial propriety and guarding the secular fabric in India, a number of protections are enforced under the project design through a One Page Rule Book and by the Bidding Criteria (described earlier).

The Institutional structure and the bidding criteria have already been covered. Described below therefore are the rules that are to be observed by school concessionaires on winning a concession to run a school.

#### 5.3.1 THE ONE PAGE RULE BOOK :

Governance in the Construction and Operations phase of this project at the individual school level will be in accordance with a one page rule book which seeks to reduce to a minimum, any operational problems and associated litigation involved with the administration of the thousands of concession agreements that will be signed under this project. This one page rule book is extremely important from a governance standpoint and it is therefore a mandatory requirement under the concession

documents. The rules will be un-ambiguous and very clear. Departure from any of the key terms of the agreement after the completion of a 3 year settling / stabilization in operations / trial period will result in termination of the concession.

Some of the key items in the one page rulebook which will also be included in every concession document are as follows :

1. Each of the 30,000 schools, is being set up with the objective of sharing teaching resources with 14 other schools within a 50 Km radius. Adequate sums of money will be specially made available each year to enable sharing of teaching resources. School managements found in violation of this condition will face termination of their concession.

Further, in the case of managements running several schools under several concession agreements, default at one location will lead to termination across geographies. This is fair because money is being specially provided for funding the teacher sharing programme and the schools are being overstaffed by design to enable teacher sharing. School managements will however be permitted to optimize resources such as transport by opting for hiring transport instead of taking the substantial transport facility ( 2 large buses, 2 mini buses, 4 jeeps and 4 small cars ) together with fuel supply that is being provided by the ISIC under the concession documents.

2. Misappropriation of funds , if proved, will be grounds for termination of the concession to run the schools.
3. If a Religious institution running a school is found to be spreading a message of intolerance for other religions ... it will be a ground for termination of the concession. In case the religious organization is running multiple schools, the ISIC will be empowered to terminate all concessions in respect of the offending operator.
4. Diversion of project land for a purpose other than education , strictly as defined under the project documents will lead to termination of the concession.
5. If a Schools management excels in the operation of a school / schools under it's operational control , it will be preferentially offered more schools to manage and will be a preferred bidder for future bidding rounds under the project documents. In such cases operators will be allowed to exceed the 50 school limit under the bidding rounds. Good performance will be rewarded by relaxing the criteria if necessary.

### **SUSTAINABLE DEVELOPMENT & THE ENVIRONMENT**

The section describes how the Education Megaproject through its use of sustainable building technologies is the worlds largest environmental project.

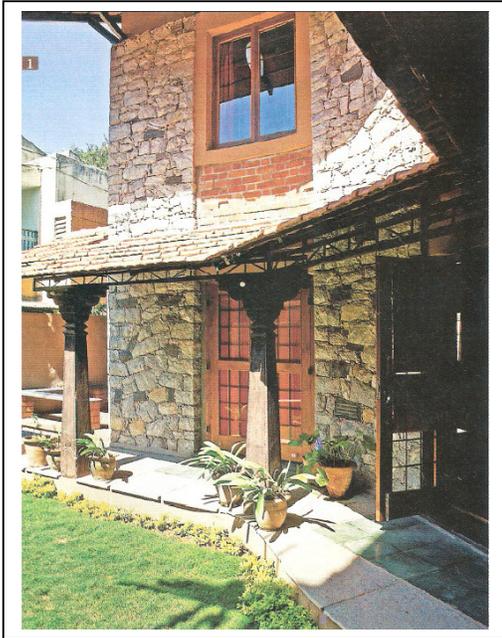
The section also shows that by building 30,000 schools and 420,000 teachers guest houses spread across India , the project will bring a totally new and extremely elegant look to hundreds of thousands of Indian Villages.

The architecture of the Auroville and Laurie Baker Schools have been chosen to make this happen by 2025.

## 6.0 Sustainable Development & The Environment

Global warming arising from construction activity within this large project is a serious concern. The Education Megaproject is therefore conceptually very different in its construction and in the materials that will be used to build the schools.

Given the scale of the project, materials of construction and the architecture chosen became important game changing variables as they will affect the future of construction in India.



In India today , everyone is mindlessly adopting Steel , Glass and Concrete in all new construction even though these materials are not best suited to Indian climatic conditions . It was therefore felt necessary to encourage a more sustainable design involving India's ethnic architecture represented by the **Auroville** and **Laurie Baker** Schools and several others. The project therefore will bring back and encourage the ancient architecture of India which has created structures that can last for 50 – 100 hundred years through the use of local materials.

Since the 30,000 schools will be built across 28 states and 7 union territories , there will be on average , between **3 - 5** such schools in every district in India. As the architecture is excellent and very pleasing to the eye , we estimate that by **2025**, the megaproject would have succeeded in making vernacular architecture the mainstream form in Indian towns and villages.

A total of 300 Architects trained in traditional Indian architecture will work with 2000 project managers and engineers for over 10 years to build the 30,000 schools. In addition **120** Masons training institutes will be set up to train **36,000** Masons each year. This will give a huge fillip to the local construction industry in traditional construction. Since each mason will work with close to 30 ordinary construction workers, it will lead to massive employment generation of an additional **1.08** Million Jobs each year in traditional construction businesses.

As the architecture style is extremely elegant ... the project by 2030 completely transform the face of rural India bringing Indian villages and small towns on par with the best villages and small towns in Europe as regards their quality of construction .

The Masons trained in the **120** training schools could organize themselves into guilds and the guilds could then bid for the individual school projects that are won under the bidding rounds. To help them take off , for the first 5 years the masons guilds will be given preference in the bidding rounds after which it will be free for all and they will be required to compete on an arms length basis with other bidders.

Masons Guilds specializing in traditional architecture are a very important part of this project as they will generate , as mentioned above, 1.08 million new jobs each year in rural India. As envisaged however, the guilds will essentially be self governing and market forces will decide their profitability. **Government will have no role to play in getting them business and the best way to do this is by protecting their interests only through broad, non-interfering regulation.** It is therefore necessary that the guilds should be encouraged to form themselves into private companies or un-incorporated joint ventures to protect their members interests. It is best to avoid allowing them to form cooperatives which breed inefficiency.

The project as designed , will dramatically reduce construction costs due to its standardized designs. Traditional and local building materials such as Laterite, clay and brick will be deployed instead of cement concrete on a massive scale to achieve a superior finish ( Pictures attached at end of concept document in **Annexure VII** ) and long lasting construction with a life of approximately **50 – 100** years without significant maintenance.

In the schools themselves , architecture will be introduced as a foundation level course from class VIII onwards. There are serious reasons for us to do this.

Certain subjects are central to learning and to the way we live , work and interact with others in society . Author and cultural philosopher George Steiner has written that a study of architecture should be included in every school and college syllabus because of the extraordinary degree to which it interacts with many other disciplines. The theoretical considerations and technical aspects incorporated in architectural design build on a child's basic appreciation of shapes and their harmonious assembly and then go on to embrace disciplines ranging from geology, material science, engineering and design to higher mathematics. But at a very basic level the realization of a architectural design involves basic concepts of economics and sociology, transportation , urbanization and ecology ...

Given the terrible condition our villages , small towns and cities are in , it is one of the objectives of this project to introduce young minds from class VIII onwards to a basic appreciation of architecture as a compulsory subject to be studied along with Maths, Science and the Arts. **The study of Architecture will be made enjoyable through Audio-visuals** by showing the children beautiful towns from around the world and handsome buildings in various countries as well as the breathtaking monuments our forefathers built in India using eco – friendly building materials that have lasted for hundreds of years in harmony with nature.

In this manner , our children and future generations in India will be exposed to the best ideas in architecture and they will re-build our villages, towns and cities and will create a very beautiful country by taking ideas in from around the world. Many of us will not live long enough to see the beautiful and handsome cities and towns that our children will build from **2030** onwards but we would rest assured in the realization that by introducing architecture as a subject of study for every child in India , we would have given them something that we did not have.

Besides its use of environmentally benign construction materials , the project will also result in the planting of **150** million trees over the next 10 years , thereby making it the [worlds largest environmental project](#).

## **ANNEXURES**

- 1. SOURCES OF FINANCE AND RELATED ASSUMPTIONS**
- 2. PROJECT CAPEX AND OPEX OVERVIEW**
- 3. MEGAPROJECT INFORMATION ARCHITECTURE**
- 4. PROJECT DESIGN BASIS PHILOSOPHY**
- 5. SURPLUS LAND WITH PSU's ... A SAMPLE SURVEY**
- 6. PROJECT BIBLIOGRAPHY**
- 7. VERNACULAR ARCHITECTURE**

Note : Annexures 3 & 4 are supporting literature which contain excellent ideas . These ideas come from others and the sources have been clearly mentioned.

## TERM SHEET

## Assumptions On Financing / Sources Of Funds :

US \$ / Rs Exchange Rate (18th march 2010) ( 45.49

Sl. No.	Source Description	Estimate of Total Possible Corpus ( US \$ Billion )	Notional Amount Potentially Available / Year ( US \$ Billion )	% Of Source Proposed For Education Megaproject	Amount Available Each Year ( US \$ Million )	Cash Available Each Year ( Thousands of Crores )	Remarks / Critical Assumptions
<b>YEARLY FUND FLOWS / Annuities</b>							
1	<b>Net Present Value Of Incremental GDP Increase after GST Implementation</b> starting 1st April 2010 (Delta Over Current). The Total Corpus in the next column is assumed and calculated over a 25 year period with a discount rate at 3 %. This cash flow will triple by 2025 when the size of the Indian economy is expected to be <b>US \$ 4.5 Trillion</b> .	500	20	10%	2000	9098	If net / delta addition to GDP is <b>US \$ 20 Billion</b> each year solely due to GST implementation, then government can afford to earmark <b>10 %</b> of that Delta to an Education Mega Project from the Consolidated Fund Of India through a special legislation that creates " The Education Megaproject Fund ". It is being assumed here that the NCAER has taken a 25 year period for calculating the Net Present value at a 3 % discount rate. If they have taken a 15 year period instead, then the yearly sums that will be available will be much larger.
2	<b>30 % of a proposed new tax on the services component in future Infrastructure projects.</b> The base case estimate of the delta / net additional Infrastructure investment in India over the next 10 years is taken at <b>US \$ 1.7 Trillion</b> ( Goldman Sachs View ). This cash stream will triple by 2025, when the size of the Indian economy is expected to be <b>US \$ 4.5 Trillion</b> .	510	5.1	30%	1530	6959.97	A new tax proposal on the lines of the recently implemented tax on the services component of housing projects ( 2010 Budget ) will need to be implemented to extend service tax to the labour and services component of Infrastructure projects. This will very easily generate a new cash source for creating the human resources necessary to plan and build large Infrastructure in India. Right now there is a shortage of 30 million trained people in the construction industry alone ( McKinsey 2008 ). So the imposition of a service tax on the labour / skill component of Infrastructure projects is fully justified. It is being assumed here that 30 % of an Infrastructure Projects cost is services and Labour. It is also being assumed that service tax on the Labour and services component will be @ 10 %.
3	<b>Graduate Tax Collected From Employers In India.</b> It is assumed here that there are <b>46 Million</b> Graduates in India ( 2004 Estimate ). This number today is larger. This cash stream will double by 2025 when the size of the Indian economy is expected to be <b>US \$ 4.5 Trillion</b> .	10.11	2.53	80%	2022.42	9200	Employers are being taxed because they are getting access to qualified graduates free of cost and have not paid a single paise for their education. This tax will be levied at the rate of 3 % on the Cost to Company ( CTC ) of the employee and will be paid not by the employee but the employer. Please note that the current education cess and professional taxes are separate taxes and are being borne by the employee. Companies must also pay a tax because they are getting trained manpower free of cost. We believe that companies will not be able to pass this tax on to employees as companies will also be competing with each others in a rapidly growing economy where skills shortages are acute. Also it has been realistically assumed that only 25 % of this tax is collectable from graduates as many work in the unorganized sector. Many housewives are graduates too. If independent professionals such as doctors can be taxed, the collection will go up dramatically. Also it is assumed that <b>80 %</b> of this tax will go for primary education as a person spends 80 % of his time in school.

## Assumptions On Financing / Sources Of Funds :

US \$ / Rs Exchange Rate ( 18th march 2010 )

45.49

Sl. No.	Source Description	Estimate of Total Possible Corpus ( US \$ Billion )	Notional Amount Potentially Available / Year ( US \$ Billion )	% Of Source Proposed For Education Megaproject	Amount Available Each Year ( US \$ Million )	Amount Available Each Year ( Thousands of Crores )	Remarks / Critical Assumptions
4	<b>Quantized Tobin Tax on Forex Transactions.</b> It has been assumed that the volume of daily average forex transactions in India and by companies doing business in India is of the order of <b>US \$ 15 Billion</b> . A Tobin Tax ( First proposed by Nobel laureate James Tobin ) to be levied at the rate of <b>0.02 %</b> on the total volume of the transaction which will be quantized as per the size of the transaction with higher rates applying to larger transactions to prevent speculation on the Indian Rupee as it moves towards Capital Account Convertibility ). This cash stream will triple by 2025 when the size of the Indian economy is expected to be <b>US \$ 4.5 Trillion</b> .	1,095	1,095	100%	1095	4981.155	Given that India is going to be the largest growing market in the world over the next few years we do not expect business to move away from India due to the imposition of this tax. The imposition of this tax has been considered in the latest meeting of the G 20 nations in 2009 and it has also been supported for implementation by none other than our own RBI governor Dr. D SubbaRao in Dec ' 2009. Since 90 % of the worlds forex transactions are cleared in just a few financial centres globally , it will not be difficult to impose this tax which can provide much needed funds to Education and Healthcare projects in Rural India.
5	<b>Yearly Rent From Re-developed PSU Land</b> by the Indian Social Infrastructure Corporation ( ISIC ) Under The Urban Equity Withdrawal Programme ( Phase I ) .	3.00	3.00	100%	3000	13647	Subsequent to the sale of 3000 Acres out of a total of 30,000 Acres of prime real estate in Indian Cities, The ISIC will publish a Global Tender inviting leading Urban Developers from around the world to come to India to develop Large Real Estate Projects. 27,000 Acres of Urban, Government owned land will be put out on bids under a Public Private Partnership. Indian companies will participate in the bidding rounds and will compete with foreign companies. The bids will require project developers to pay an upfront annuity / yearly instalment of US \$ 3 Billion for the 27,000 acres taken together over the first 10 years and submit plans for the development of Financial centres where the ISIC will be the owner of 50 % in each project. Developers will need to come up with ideas whereby the net earnings to the ISIC will be of the order of US \$ 10 Billion each year from the 27,000 Acres of prime real estate starting from the 7th year after the Bidding. This effective Urban Equity Withdrawal plan will provide funds for rural development.
6	<b>Yearly Rent From Redeveloped PSU Land</b> by the Indian Social Infrastructure Corporation ( ISIC ) Under The Urban Equity Withdrawal Programme ( Phase II ) .	10.00	10.00	100%	10000	45490	Phase II cashflows will begin to accrue from year 7 onwards as the PPP projects in Urban Development begin yielding a return of US \$ 10 Billion to the ISIC as explained under V above.

## Assumptions On Financing / Sources Of Funds :

US \$ / Rs Exchange Rate ( 18th march 2010 ) 45.49

Sl. No.	Source Description	Estimate of Total Possible Corpus ( US \$ Billion )	Notional Amount Potentially Available / Year ( US \$ Billion )	% Of Source Proposed For Education Megaproject	Amount Available Each Year ( US \$ Million )	Amount Available Each Year ( Thousands of Crores )	Remarks / Critical Assumptions
7	<b>Teacher / Content Outsourcing Business :</b> The Education Megaproject will be employing approximately 1.74 Million Teachers across India on 5 year Rolling Contracts. It is proposed that the terms of the contracts be flexible enough to permit teachers to organize themselves into teams which could then, in an organized manner, produce education content for the world market. The revenue earned through this venture will be shared by teachers and the ISIC in the ratio 60:40 with the larger sum going to the participating teachers. They will also participate under the Aegis of the ISIC in a Teacher Exchange Programme with schools in foreign countries. For the purposes of this calculation the total teacher strength is assumed as 1.74 Million. It is further assumed that just 50 % of the teachers will participate in this venture and that each teachers' extra earning potential is Rs 5,00,000 each year.	21.04	10.52	40%	4207.52	19140	It is being assumed that revenues from the <b>Teaching Content Exchange Programme</b> will be shared by Teachers / ISIC in the ratio 60 : 40, with 60 % of the revenues going to the teachers. We have therefore included only the balance 40 % of revenues as ISIC income. <b>Further, we do not believe that this activity will disturb teaching activity in the country</b> as teachers have considerable amounts of free time and because the schools have been overstaffed by design not just for sharing teachers with 420,000 existing and deprived schools but also with this kind of revenue opportunity clearly in mind.
8	<b>Quota on Fractional Vouchers / NRI Students on SAARC / Foreign Students :</b> A majority of the students within the Megaproject will be on Education Vouchers ( 60 - 70 % ). However some 37 % + of the students from middle class families and well off families will be on <b>fractional vouchers</b> with 2 / 3rd subsidy and an additional 2 - 3 % could be from SAARC countries or NRI / Foreign Students who will pay a premium ( Double The Voucher value ).	5.10	5.10	100%	5103.80	23217.18	Fees for Children will be quite affordable to parents as they will be charged at 1/3rd of the value of the voucher. In the case of Day schools fees will be in the range of Rs 25000 / child and in the case of fully residential schools, fees will be in the range of Rs 65,000 - Rs 75,000 which we believe are very affordable for the Middle Class and above.
<b>ONE TIME FUND FLOWS - DIRECT FINANCE FOR CONSTRUCTION</b>							
9	Coordinated Equity Withdrawal By the ISIC on PSU Owned Land in Metros and Large Cities	40	40	100	40000	181960.00	The procedure for this is explained in great detail in the project concept document under construction phase financing.
10	Un-Utilized Funds with various Ministries and NGO's	21.59	21.59	100	21590	98212.91	This financing option has emerged through a study of the Comptroller & Auditor General's report ( CAG Report ) for 2007 - 08. A special audit committee will be constituted to trace and recover this money for the Education Megaproject.
11	Equity Infusion By Promoter groups for 25,500 Day Schools and 4500 Residential Schools	6.74	6.74	100	6741.48	30666.38	This money will come from the Promoters of 30,000 Schools over a 10 year period ( 2012 - 2022 )
12	Committed and Un-Utilized Funds Lying with the World bank and the Asian Development Bank, on which the government of India is paying Commitment Charges of over <b>Rs 125 Crores</b> each year.	15.6	15.6	100	15600	70964.40	This financing option has emerged through a study of the Comptroller & Auditor General's report ( CAG Report ) for 2007 - 08. Usually World Bank / ADB Loans are available for specific projects and cannot usually be re-assigned. We believe it will be possible to <u>lift</u> the entire corpus for this single Education Megaproject as the project subsides within itself areas as diverse as Women and Child health and education to rural sanitation and rural roads etc.

## Assumptions On Financing / Sources Of Funds :

US \$ / Rs Exchange Rate ( 18th march 2010 )

45.49

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Sl. No.	Source Description	Estimate of Total Possible Corpus ( US \$ Billion )	Notional Amount Potentially Available / Year ( US \$ Billion )	% Of Source Proposed For Education Megaproject	Amount Available Each Year ( US \$ Million )	Amount Available Each Year ( Thousands of Crores )	Remarks / Critical Assumptions
<b>OTHER POTENTIAL SOURCES OF FINANCE</b>							
13	In early March '2010 , India's Foreign Exchange Reserves stood at <b>US \$ 278 Billion</b> . This is a huge sum and it has earlier been suggested by several others that a small part of the RBI's reserves should be used to finance Infrastructure projects in India. Schools represent essential social infrastructure and the Education megaproject could draw on some of this resource.	278	2.78	1%	2780	12646.22	The Education Megaproject <b>has not included</b> Foreign Exchange Reserves in its sources in the current <b>Rev 03</b> of the project. This represents a potential future source of finance.
14	Dis-investment in Indian Public Sector Entities and Banks. This represents a huge potential source of funds . However successive governments have been using dis-investment proceeds to help bridge the huge fiscal deficits that the government of India runs. In fact this money is best used to finance productive capital expenditure as in education projects that greatly enhance the country's GDP.  If <b>US \$ 1.7 Trillion</b> is to be invested in Infrastructure over the next 10 years, <b>the first sector that will expand exponentially is banking</b> . Government of India will do well to dis-invest it's stake in a few large banks to raise additional resources while at the same time allowing a greater private sector role in the banking industry , with strict controls in place of course.	30	3	10%	3000	13647.00	The Education Megaproject <b>has not included</b> Dis-investment proceeds in its sources in the current <b>Rev 03</b> of the project. This therefore represents a potential future source of finance.

**Note :** This is an important Annexure. Please refer to the detailed Excel Spreadsheet accompanying this document or downloaded from [www.nataraja.org.in](http://www.nataraja.org.in) for details.

EDUCATION MEGAPROJECT - OVERALL CAPEX / OPEX SNAPSHOT OF PPP SCHEME																
Item	Bootstrap 1			Phase I			Phase II			Phase III						
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>Cash Requirements Summary</b>																
US \$ / Rs Exchange Rate ( 18th march, 2010)	45.49															
<b>Teachers Training Institutes (Lot @ Rs 8 Crores Capex &amp; Rs 4 Crores Opex for each per year)</b>	250	250														
<b>Pilot Projects ( Schools in 28 States + 7 Union Territories) ... 85 % day schools and 15 % Residential Schools</b>	35	35														
<b>Masone Training Institutes ( Lot &amp; Rs 5 Crore Capex and Rs 2 Crore Opex for each / year)</b>	60	60														
<b>Day Schools</b>	850	2125	2125	2550	2550	2550	3187	3187	3187	3187	3187	3187	3187	3187	3187	3187
<b>Residential Schools</b>	150	375	375	450	450	450	563	563	563	563	563	563	563	563	563	563
<b>Total Schools Construction Started Each Year</b>	1000	2500	2500	3000	3000	3000	3750	3750	3750	3750	3750	3750	3750	3750	3750	3750
<b>Commissioning Sequence ( For Initiating Opex )</b>	1000	2500	2500	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
<b>Cumulative commissioned</b>	1000	3500	6000	9000	12000	15000	18750	22500	26250	30000	33750	37500	41250	45000	48750	52500
<b>Costs of Teacher Shating Programme</b>																
<b>Guests Of Teachers Guest houses ( A total of 4,20,000 Guesthouses will be built under the teacher sharing programme )</b>	14000															
<b>Fuel Costs Of teacher shating programme : Rs 11.56 Lakhs / School / Year to cover 14 assisted schools</b>	0.116															
<b>IT System for Existing Schools ( % Complete )</b>	20%	40%	40%													
<b>Total Cost Of System with alerts @ Rs 500 Crores :</b>	100	200	200													
<b>IT System for Megaproject Schools ( % Complete )</b>	0	0	0	758	1895	1895	2275	2275	2275	2275	2275	2275	2275	2275	2275	2275
<b>Total Cost Of System with alerts @ Rs 500 Crores :</b>	0	0	0	758	1895	1895	2275	2275	2275	2275	2275	2275	2275	2275	2275	2275
<b>Forming and Staffing Of the ISIC with Average Salary @ Rs 70 Lakh / Year = Rs 450 Crores ( Fully Staffed as below )</b>	135	315	450	450	450	450	450	450	450	450	450	450	450	450	450	450
<b>Project Engineers, 300 IT Professionals, 100 Lawyers, 300 Architects</b>	1000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
<b>Oper. Cost of Teacher Training Institutes</b>	120	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
<b>Oper. Costs of Masone Training Institutes</b>	300	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
<b>Development Of Vernacular Languages + Urdu+ Hindi + Sanskrit</b>	300	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
<b>Capital Expenditure ( US \$ Billion )</b>	0.66	2.93	7.12	9.95	11.96	12.71	13.00	14.69	15.81	16.26	16.26	16.26	16.26	16.26	16.26	16.26
<b>Operational Expenditure ( Rs. Crores )</b>	1476.84	2998.68	3133.68	9655.31	25551.05	41386.80	60468.36	79473.25	98468.14	122327.60	146097.05	168866.51	193632.60	193632.60	193632.60	193632.60
<b>Total Capital Expenditure ( US \$ Billion )</b>	597651															
<b>Total Operational Expenditure ( US \$ Billion )</b>	131.38															

Sanskrit is possibly the worlds oldest language and it is dying in India. The Education Megaproject therefore allocates Rs 8000 Crores over 10 years to the promotion of Sanskrit in schools and for the digitizing of Sanskrit content as Sanskrit serves as the basis for several Indian and even international languages. This will reverse the huge neglect it has suffered neglect over the last 100 years. All other Indian Languages ( Tamil, Bengali, Marathi, Telugu, Gujarati, Kannada etc. ) including most importantly Urdu and Hindi together will receive an additional Rs 20,000 Crores over 10 years under the Megaproject for the development of digital content and opening of institutions for scholars. Total Rs 28,000 Crores Encouragement of local languages will allow the poorest citizen to participate fully in the economy. We want every farmer and labourer to have an equal opportunity and language should not be allowed to be a barrier due to lack of Funds. The Education Megaproject has a special large budget for Vernacular Language propagation.

### **Acknowledgement Note :**

The Ideas and Concepts discussed in this section have been substantially borrowed from the Product / Technology literature that belongs to Pointcross Inc ([www.pointcross.com](http://www.pointcross.com) ) . The Indian Education Megaproject has directly taken the language from Pointcross's literature as we feel that it most aptly describes an innovative and new IT product which could possibly meet the very demanding needs of the project System we wish to deploy to control the 30,000 schools that the Megaproject will set up in India. We have adopted this technology as it represents a new benchmark in software and a level of excellence which we wish to imbibe in the Education Megaproject. However , the ultimate choice of the Technology platform for the Megaproject will be made by the Project Authorities based on a tendering process involving competing products by technology vendors.

## **Annexure 3.0 MEGAPROJECT INFORMATION ARCHITECTURE**

### **The Need For A Robust Information Architecture**

Phase I of the Education Megaproject's IT implementation seeks to bring greater efficiency to the current flagship programmes of the Government of India such as the Sarva Shiksha Abhiyan ( SSA ) where considerable leakage is taking place.

One of the SSA's greatest weaknesses is that the opaqueness within the system makes it very difficult to find out where decisions are being held up. There is therefore no predictability in fund flows to the schools due to procedural delays within the central and state governments. In practical terms this means that once orders are issued and funds are sanctioned at the ministry level , there is no proper system to find out who is delaying things down the chain and why.

Secondly , as the Annual Survey of Education ( ASER ) report 2009 reveals, because of the lack of transparency in the system and layers of red tape , in many instances , even the headmasters of schools are not aware of the different grant components, when they will arrive or what they can and cannot be spent on. To add to all this are the SSA's rule based procedures which are too rigid and norm based which makes it very difficult to adapt the system to local needs.

To avoid such problems the Education Megaproject has adopted a truly next generation and advanced IT platform which will make people and their transactions totally transparent. The system will create dynamic, real-time digital dashboards with drill down capability combined with contextual alerts to identify potential and actual sources of problems within the system. Using this technology and its sophisticated protocols it will be possible to drill down from the national level to the state level to the district / taluka level and even to the level of the individual school. Therefore if someone within the system is holding up decisions, his / her name will be flashed as an alert both to his / her superiors as well as to the affected schools , thereby making the whole system extremely transparent and making it next to impossible for anyone to drag decisions.

Finally , the “ contextual communications “ platform chosen for the project will also allow for seamless migration from an ultra efficient project planning and execution phase to a state of the art operations experience. This system therefore overcomes all the shortcomings within the SSA and its associated Mid-Day Meal Scheme as regards their information systems by migrating the entire school system in India to an entirely different level of efficiency and accountability ... **at a cost which is a fraction of what we might imagine.**

### **The Contextual Communications Platform**

The Education Megaproject will be setting up a total of 30,000 new schools in 28 states and 7 union territories over a 10 year period. In addition it will set up a system to share teaching resources and content with between 7 to 14 schools within a radius of **50 Km** of each of the 30,000 new schools so as to reach between 210,000 – 420,000 additional schools across India. This is a truly massive task and it will cannot be accomplished without a robust and scalable web based IT Platform that will monitor thousands of government offices and participating NGO's across India as they execute a project that has the potential to cover upto 126 million children simultaneously.

To meet the extremely demanding information standards of this huge social infrastructure project, for the purpose of IT system design , the Education Megaproject 's organizational

matrix is treated as a project enterprise that communicates information in real time across inter-organizational and intra-organizational boundaries in a manner that ensures three things :

1. Visibility / Transparency
2. Accountability & Measurement of Outcomes
3. Preservation of Context

The IT system will be required to connect hundreds of organizations , some with thousands of employees each as they play different roles during different phases of the project life cycle ranging from planning and scheduling to financing, procurement, execution and finally into operations where **millions of education vouchers** will need to be distributed, managed and monitored to gauge the performance of each child within the system by using among other tools the Unique Identification Number program of the government of India.

The Contextual Communications Platform and its digital dashboards will be implemented in two phases :

**Phase I** - Within the existing SSA and the Mid Day Meal Scheme, starting immediately so as to realize quick efficiency gains and to strengthen the SSA / Mid Day Meal System

**Phase II** – Within the Education Megaproject , starting with the planning phase and then moving into the operations phase

### **Making People & Their Transactions More Visible**

One of the major problems with the SSA and its associated Mid-Day meal Scheme is its lack of transparency as has been explained earlier.

To solve this problem, in **Phase I** , the system will create dynamic, real-time digital dashboards with drill down capability combined with contextual alerts to identify potential and actual sources of problems within the current ( SSA / Mid Day meal System ). Using the technology it will be possible to drill down to the level of the individual school. If someone within the system is holding up decisions or diverting funds to un-authorized project codes, his / her name will be flashed as an alert both to his superiors as well as to the affected schools , thereby making the whole system extremely transparent and making it next to impossible for anyone to drag decisions or deviate from the program.

The drill down functionality will enable government policy makers and NGO's to move from summary information at a higher level to a lower level containing more detailed data by focusing in on any particular parameter "**Context**".

Today though there is a lot of information available within the system , the information architecture that is currently deployed does not allow the system to operate in real time for it to be of much use. For instance the following link ( below ) takes us to a small village school in Betauli village , in the Jehanabad district in Bihar. There is a lot of data on this link about this village school dated Sept 2008 ... but this data **totally useless** for operational purposes.

<http://www.schoolreportcards.in/seeschoolreportdetail09.asp?cmbsschool=10330300201&cmbstate=10&cmbdistrict=1033>

The Megaproject's information architecture will be much more event driven. For instance, **when funds are released by the ministry of HRD or the concerned state government, the headmaster of each school ( based on a school code number ) , through a simple internet**

connection at the nearest town / village or SMS facility on his mobile phone will get an alert that the funds for his school have been released and it will also clearly state what the grant component can be spent on. This will cut the waiting time from a couple of months and endless visits to the district or state headquarters to a few seconds. **We have the technology to achieve this today at a cost which is a fraction of what we might imagine.** Government of India can contact any good technology vendor to get a quote for the installation of such a system wide information architecture.

The system will allow users to quickly move through the hierarchy of folders to find a specific file or to click through drop-down menus in a Graphical User Interface ( GUI ) such as a map . Clicking on a map of a particular state for instance will move you to a level of greater detail. Clicking on a district within a state will make all the schools within that district visible and so on.

While the data will be visible to all authorized personnel and even to the hundreds of participating NGO's over the internet , it will however have secure security levels and only authorized personnel will be able to make changes to the data.

The education megaproject will allow project officials, NGO's, Vendors and Contractors to scan transaction databases to access information on project schedules, progress reports, future tenders and new technologies / techniques used. They could for instance start with a general map of any region in India and then move through the hierarchy **of field to file to record**. The project will, in this regard , be providing considerable granularity that will allow drill down to the individual student level to monitor what benefits he / she and his / her parents are getting from the system by using in with the database of the Unique Identification Number Authority. All this information . across 28 states and 7 union territories will be accessible to authorised organizations at the click of a mouse.

**Teacher Absenteeism is a major problem in India** and as mentioned earlier in most states , teachers do not bother to attend school for **25 %** of a working year. This means that teachers come to school for just 188 days each year. Since “ Teacher Absenteeism “ is such a huge problem and since tens of millions of children and their parents are suffering there needs to be a system that ensures teacher accountability. The Education Megaproject's communications platform will therefore be configured to allow access to NGO's who will input information / complaints regarding teachers attendance in village schools. **Once a certain pre-determined score / instances of absenteeism is accumulated within the system regarding a certain teacher , the system will generate an alert and put in place a penal process with a show cause notice in the first instance.** If the defaulting teacher does not reform , his / her habits, the system will generate termination of service proceedings against the errant teacher who will be dismissed from service for repeated defaults after being given a fair hearing by a district level education committee. If the district level committee cannot take a decision and default continues by the teacher , the system will refer the case to a state level committee which will follow a proper legal process consisting of hearings and the submission of evidence against errant teachers. Once a decision in the matter is taken by the state committee it will be final and binding on all concerned.

Charts and graphs for instance will provide a quick assessment of a single item by indicating whether the measured parameter is within set limits. Inter state and intra district comparison of schools will also be possible . Using this capability to reach into deeper levels of underlying information, administrators and NGO's who will be connected to the system will be able to quickly bring projects back on track by quickly isolating the source of problems and taking corrective actions by alerting / warning the schools concerned. Administrators will also be able to access the latest real time data and take relevant and speedy decisions. **By comparison, the current IT architecture within the ministry of HRD / SSA provides static data that is 2 – 3 years old and therefore of little use in real time decision making.**

Since everyone will be seeing the same underlying data , everyone will be on the same page as to what the situation is and what needs to be done to rectify the problem if any. Since the system will allow users to choose between various reporting formats ( on the same data ) , it will allow for data analysis according to various criteria to generate new insights and this will greatly help with further improvements to the system. The system will also have a powerful scenario planning tool that will help in project planning and scheduling as well as with operational issues so as to improve reach and ensure that every child in India receives a good education.

### **The Project Enterprise Structure**

The Education Megaproject will be India's largest social Infrastructure project with perhaps the biggest impact on society that this country has seen since independence in August 1947.

The project will involve not just different government departments and multilateral financial institutions but also a huge number of Companies, Engineers, Architects, Law firms , NGO's , teacher associations , Village Panchayats , Urbal local bodies, independent consultants and environmental work groups. This kind of loose organizational set up requires a robust and scaleable platform to manage not just the huge real time information flows during the planning and execution phase but also during the operations phase and it requires to do all this while maintaining the “ **Context** “ of the communications at each step so that the organizations and the networks value increases over time.

To achieve these objectives, we have, at the concept stage itself conceptualized the Education Megaproject and its proposed network of partner organizations as a Project Enterprise. The following table shows how this concept differs radically from the earlier concept of a project from an Information Technology standpoint.

**Table : The Education Megaproject as a Project Enterprise**

<b>Sl. No.</b>	<b>Attribute</b>	<b>Traditional Project Management</b>	<b>Project Enterprise management / Education Megaproject</b>
1	Organization	Internal & Local	External & Distributed with Central & State Government sharing information and working with thousands of Participating NGO's
2	Participants	Relatively uniform teams	Diversified NGO's and Government / Project offices driven by the needs of different phases of the project
3	Orientation	Tasks and Processes	Deliverables & Results
4	Focus	Planning Scheduling and Cost Controls	Organizational Interactions and Knowledge Management
5	Scope Plans	Fixed but subject to frequent scope revisions	Fluid , but with recognition that Megaproject requirements will evolve over time
6	Collaboration	Sequential , depending on organizational structure	Contextual & Real Time

7	Sharing Content	Piece Meal	Massive sharing of knowledge content over a terabit capable network
8	Execution Structure	Self Sufficient & Isolated	Inter-dependent & Integrated
9	Attitude to change	Resistant	Recognized
10	Decision making	Single Project Leader	Distributed & Interdependent leadership
11	Execution Speed	Low to Moderate	High Velocity

Source : Various IT Vendors

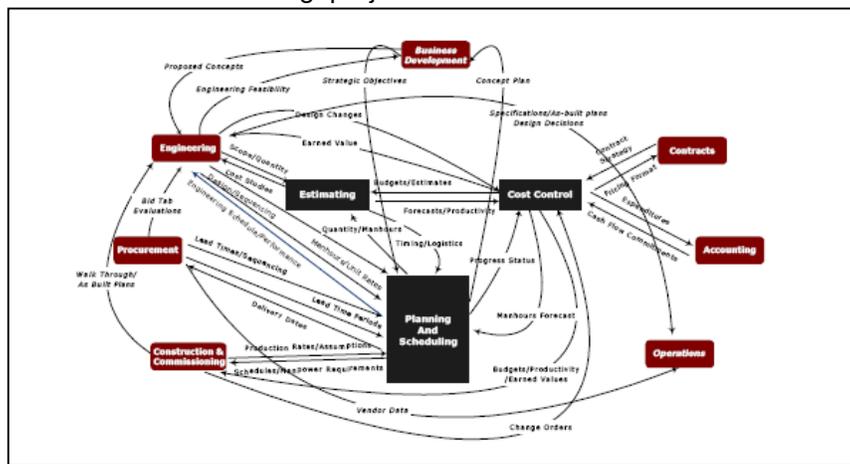
### Efficient Project Enterprise Structuring

As stated earlier , The Indian Social Infrastructure Corporation ( ISIC ) , a statutory organization, set up under a specific act of Parliament will be the owner of this project ( **Not the Ministry of HRD** ).

Since requirements constitute the driving force behind any project enterprise , the ISIC as project owner will specify **project requirements** or formal objectives in a hierarchical manner ( proceeding from Top Management level, more abstract elements to lower level, more specific ones ). This **Taxonomy** or hierarchy of requirements may include project / material / performance specifications, tasks, milestones, deliverables or procured items. Requirements structured in this manner will provide the foundation for allocating work to relevant project entities , Government offices , NGO's & individual school operators and their personnel, describing each element along a number of dimensions and establishing workflow processes.

A similar structure is also required for the **response view** of the enterprise which is the approach that articulates how the owner ( ISIC ) specified requirements will be met. Once requirements and associated responses are structured within the project enterprise structured platform, there is a need for a **linkage tool** that maps out one or more responses to a certain owner specified requirement.

The schematic below shows the project control information flow pathways that ensure efficiency and real time control right from concept to completion and into operations of the 30,000 new schools and their participating network of between 210,000 - 420,000 schools under the Education Megaproject.



Source : [www.pointcross.com](http://www.pointcross.com) , Rahbar 2000  
Schematic Source : Pointcross.com & Rahbar 2000

Implicit in the above matrix of relationships is the understanding that the requirement-response-linkage triad is a dynamic structure , which evolves over time as the enterprise proceeds from concept to completion. Further as the enterprise proceeds through time, a project response for one phase will become a foundation for a set of requirements for the next phase. The Education Megaproject has been organized into 2 bootstrapping phases and 3 major execution phases to ensure that learning in these phases is incorporated into the implementation during the next phase. In all these phases, requirements and responses are mapped depending on the context.

### **Data Centricity**

The Context based communications platform adopted for the Education Megaproject is a data centric platform and not a document centric one. This implies that within this project's ecosystem , raw data are separated from their representational schemes ( i.e documents ) as has hitherto been the normal practice in most projects.

A major advantage of data-centric solutions is that data manipulated in one place can automatically be updated in all other places. Therefore , multiple views of the underlying data (including documents) can be created by assigning various forms to the same data. Data-centricity, therefore, incorporates document-centricity and enhances it by allowing different representations of the same data.

Traditional, document-based approaches cause considerable re-work, tend to bury critical information in documents and e-mails and limit the ability of project entities to adapt quickly to new needs. A data-centric platform, on the other hand, inherently supports concurrent work, supports multiple and customizable views of underlying data elements, allows monitoring of relevant information to trigger workflow and alerting processes, and will ensure that participating government and private organizations & NGO's working on the megaproject can rapidly respond to changing needs.

Equally importantly, data-centric representation of project knowledge within any phase within the education megaproject automatically creates data liquidity for succeeding projects in all the 28 states and 7 union territories across India making it far easier for the staff and participating organizations within the megaproject to transmit data into e-procurement engines and internet based administrative protocols. The use of a generic framework, which supports a hierarchical structure to represent project requirements and responses will allow concerned government organizations, companies, school operators and participating NGO's to treat major systems and subsystems as objects that can easily be transplanted from one project enterprise to another like building blocks.

This is a major step towards the standardization of processes and uniform application of best practices within government offices , participating NGO's and each of the 30,000 new schools that are to be set up . Within this component - based approach, data structures in the project enterprise IT platform will become the building blocks from which complex social infrastructure projects in India can be

easily assembled at any time in the future. Such an adaptive, reusable approach to future project enterprises has significant cost, time and quality implications that will save the government of India thousands of crores of rupees in the future.

### **The Need For Contextual Communication**

E-mail and Conferencing which we take for granted today , were designed for person to person or group to group correspondence. Such tools are so commonly and frequently used in today's work environment, that we do not easily realize that they are actually **not conducive** to efficiency and re-use in a learning and growing organization.

The education megaproject therefore seeks to move social infrastructure planning, execution and operations within the government of India to the next generation of re-useable experience on a more advanced communication platform.

To understand the concept of “ context “ we only need to observe that the “subject” of an e-mail need not necessarily be the “ context “ to which that e-mail belongs. For example, a subject marked “Design Change Request” may relate to the school roof design in one context, and to the interior design of a class room in another. The fact that multiple contexts and subjects may be buried within the e-mail only complicates matters further. All of these situations can cause information to be overlooked, lost, improperly filed, or simply ignored resulting in huge amounts of useful information lying forgotten in millions of emails. Context switching therefore with the objective of re-use , is a very expensive and wasteful exercise, and forces each email recipient to maintain separate filing systems (folders) simply to keep track of communications as this context specific e mail requirement cannot be easily supported by current e-mail systems which in turn leads to confusion and cost and time over-runs in projects.

The Education Megaproject therefore ensure seeks to that e-mail communications for the project enterprise will be context-to-context rather than person-to-person. Person-to-person email will then only be used for confidential personal communication that both author and recipient have no desire to share with anyone else. In this way the system will ensure that all personnel authorized to see the communications are able to see it.

This also implies that contextual e-mail messages can also be automatically triggered by workflow alerting engines. Email exchanges within the megaprojects contextual communications platform system would also take the form of threaded discussions to further preserve context. Such a system would obviate the need for separate e-mail organizing systems, and create a self-organized decision trail for future reference freeing up considerable time for more productive work.

Conferences and instant messaging are to be treated in much the same way. This simple yet powerful concept will allow all organizations participating in the education Megaproject to become more event driven and concurrent.

## Work Breakdown Structure (WBS)

The Education Megaproject's contextual communications architecture will need a WBS that splits work, in a time bound manner between various government departments, the Indian Social Infrastructure Corporation, Participating NGO's and actual school operators. The creation of this WBS is one of the crucial requirements for the efficient execution of the project.

Hitherto, Traditional project management software systems used for resource allocation have been indifferent to the content in work elements that drive the allocation process. This is not the most efficient way to do things and therefore the WBS associated with the Education Megaproject has been made a part of the body of knowledge that describes requirement or response work elements, at different levels of the WBS to greatly increase the efficiency of execution of the various elements of work.

Many project management software systems have excellent tools for managing resources once work assignments are decided; therefore, an implicit requirement of the Education Megaprojects enterprise IT platform is that it should interface with such tools. When this is supported, adoption of the new technology is facilitated because it builds upon practices that team members have become accustomed to.

## Workflow Processes

The term "workflow" is used in this context to describe relationships of various work elements (specifications, milestones, deliverables or tasks) in a project enterprise. The enterprise IT platform must provide support for defining dependencies among work elements to create the network of activities that must be orchestrated to ensure that milestones and deliverables are successfully attained. Creating such dependencies at the context of each work element ensures that relevant team members know exactly what is to be accomplished and when. As previously indicated, because electronic communications are also tagged to the context, automated procedures can be initiated when certain project thresholds are achieved, to remind team members about critical workflow events.

## IT Enabled Construction Standards and Specifications

The Education Megaproject will have a huge team of around **300 Architects** and **2000 project managers / project engineers** employed over a period of 10 years to execute the construction phase of the project.

To greatly simplify the work of the different construction companies, masons cooperatives and government organizations who will approve the construction drawings and Material Take Offs (MTO's), it is envisaged that the **project architect's committee** will standardize 6 different school designs that winning bidders in the school bidding rounds can choose from. Once the 6 different school designs are frozen, they will be codified and detailed material take offs will be prepared for each of the 6 different designs. The information pertaining to the MTO's and their associated costs will be fed into the system to which the projects registered vendors will have ready access. The system will also specify the protocols to

which interested vendors must conform to be eligible for consideration as a potential supplier of material and other services including labour. The masons cooperatives will specifically be trained to understand the simple procedures that they must follow to win construction contracts involving schools.

A major component of engineering / construction projects, and one that is usually handled as an island set of activities, involves systems (or process) engineering and contractual activities. These include industry - or company-defined standards and specifications, datasheets, and information pertaining to inputs, outputs and interfaces (e.g., such as those specified for plumbing and utility systems in the school project area ). Similarly, contractual information involves extensive use of standardized contract vehicles, specifications, and administrative clauses.

Representing all of these types of information as data-driven templates within the context of relevant work elements immediately adds rich data warehousing and mining capabilities to the project enterprise platform. For instance, "smart" datasheets implemented as standardized XML templates allow equipment or component purchasers to add live data that can be queried, analyzed and responded to by relevant suppliers. These data can also serve as addressable information for use in engineering calculations. Bid tab evaluation processes to assess supplier responses are also easily automated and simplified with obvious time and cost savings. Further, packaging specifications and smart datasheets with contractual information allows project components to be seamlessly interchanged with e-procurement and e-marketplace engines with little, if any, rework effort. The time and cost benefits of such functionality are obvious.

### **Project Estimates, Budgeting, and Job Costing**

During the front-end development as well as execution of the education Megaproject , estimation and budgeting tools will be an integral part of the project enterprise solution. Until scope definition is complete, or individual contracts have been awarded, estimation tools and historical data **from previous / similar projects** will be fed into the system database and made available to participants who bid on segments ( say 20 schools ) of the overall scope of work. After awards have been made, estimation tools must be replaced by a budgeting process that allows base-lined allocation of resources for scope execution. During actual execution, the process will transition to a job costing mode where the emphasis will be on capturing "actuals" pertaining to the use of material and labor resources, accounts receivable and deliverables.

The project enterprise structure must be segmented to allow management by designated authorities. For the purpose of simplicity , the Education Megaproject will vest the responsibility of maintaining all this data of the overall project enterprise with the ISIC which will be a single source of information and the repository which will mirror the individual project related databases of all the participating companies . The access to this back-end financial system must obviously be restricted from the front-end enterprise platform. This is because sensitive cost estimates and internal estimation tools should be accessible only to designated personnel from relevant companies. At present, each company maintains independent financial and accounting systems that capture transactions and maintain historical data, which are

used for estimation purposes. Integration to these systems in a secure manner is a desirable long term goal. The financial back end and all its associated transactions together with all its alert history will however be open to audit by the Comptroller and Auditor General of India on a continuous basis / On demand.

The budgeting process within the megaproject will use data from the estimating process and from accounting systems to maintain correlation between work elements and accounting budgets assigned to them. This process will also require integration with back-end accounting and financial systems if true seamless behavior is to be maintained. Note however, that scope elements would be tied only to the accounting system of the company responsible for that portion of the overall scope.

Budget interfaces between companies participating in the megaproject would be derived from the contractual elements and the underlying smart contract sheets (which are analogous to engineering datasheets previously discussed in the section on Standards and Specifications). This is because the budgeted cost of procured items is defined within the terms of the corresponding contract.

A very complex issue that needs to be addressed in this context is the fact that budgeted costs have a time dimension tied to events that may differ according to contract types. For example, in certain contracts, payments are tied to milestone events, whereas other contracts involve payments that are made on the basis of monthly estimates. Certain contracts may even involve payments that occur only upon delivery of complete systems. Most contracts also have complex holdback terms, and contingencies that need to be addressed. Therefore, the budgeting process must be capable of integrating all of these commitments and layering them into associated work elements (i.e., the WBS), which are bounded by individual contracts.

During execution, the Education Megaproject enterprise IT solution must support structured data interchanges (e.g., need dates and specifications) between relevant procurement systems. These may include back-end financial systems, supply chain solutions deployed by individual companies, or e-market/e-procurement engines. The ability to compute and present actual costs incurred needs to be supported in real time. This is important because real time data offer the only mechanism to truly tighten the project control loop. For example, labor costs in project budgets are usually captured at the employee's organization. Rather than re-keying these data, the long-term approach should focus on allowing linkages to back-end accounting systems within the Education Megaproject's backend. Until such systems integration tools are in place, direct entry may be required.

Material purchases, component delivery and contract milestone payments also need to be captured from accounting and financial software systems. Material delivery tickets and inspection certificates would also need to be posted and interpreted by the project enterprise IT solution. Likewise, labour resource projections, need dates, and scheduled dates must also be posted by the project enterprise solution to back-end accounting and order processing systems in order to completely close procurement and work progress loops.

It is conceivable that if back-end systems do not grow their internal capabilities to make such integration easy and dynamically configurable, project enterprise solutions will end up with the burden of supporting these transactions as well.

### **Document Management**

We have previously discussed limitations of purely document-centric approaches within the context of project enterprise management. In many situations, however, documents ( particularly school project blueprints , engineering visualization and design drawings) are important sources of knowledge. Their benefits can be best realized in an enterprise IT platform by designating a document management component within the context of each work element. This prevents the proliferation of documents across the enterprise space, at the same time ensuring judicious use of the content captured in them. Typical document repository features (e.g., version control with rollback features, mark-up capabilities, and viewing support for multiple file formats) should be provided with such functionality within the Education Megaproject's overall IT Plan.

### **Open, Extensible, and Scaleable IT Architecture**

The Education Megaproject's IT Platform discussed under the " Contextual Communications " headline has been specifically designed to be user friendly. It is therefore capable of supporting the enterprise team instantly, out-of-the-box, and with minimum training. It is also capable of delivering functionality derived from integration with other organization applications. The solution is also scaleable as it can grow from a network of a few hundred locations during the bootstrapping phase to between 240,000 – 450,000 different locations at the end of a 10 year period from startup via its interfaces to the outside world which will be open and inter-operable.

**Phase I** of the Education Megaproject, which has been suggested as a way of strengthening of the SSA's information architecture will allow and indeed provide for a proper integration pathway with legacy or in-house systems of different Government of India Ministries that currently interact in the primary and secondary education space . This is to reduce data re-keying that may otherwise be required. Access to such resources would, of course, only be available on a secure basis to members belonging to these ministries and the ISIC which is the project owner of the Education Megaproject. During **Phase II** which is the execution phase for the 30,000 new schools , other project participants (e.g., EPC Contractors, Masons Cooperatives and participating NGO's ) would typically be given access only to the direct functionality of the IT platform, and not to other internal networked resources. They would also participate only during relevant phases of the project lifecycle (not beyond it).

Such entities would need to deploy their own enterprise IT solution if they desire to build a structured knowledge base for use in other ventures. Integration pathways may include unidirectional or bi-directional data flow, on a real-time or event-driven basis, to one or more specialized software applications serving the needs of different business units. These units may include business development, contracts,

engineering, finance and accounting, procurement, construction and commissioning, and operations.

The Education megaproject , with its Internet-based suite of integrated business applications explicitly designed to meet the requirements of the project enterprise may therefore be very necessary for obtaining the best results to build on not just the economies of scale and scope but on **the economy of Knowledge** itself.

**Note :**

The Ideas and Concepts discussed in this section have been substantially borrowed from the Product / Technology literature that belongs to Pointcross Inc ([www.pointcross.com](http://www.pointcross.com) ) . The Indian Education Megaproject has directly taken the language from Pointcross's literature as we feel that it most aptly describes an innovative and new IT product which could possibly meet the very demanding needs of the project System we wish to deploy to control the 30,000 schools that the Megaproject will set up in India. We have adopted this technology as it represents a new benchmark in software and a level of excellence which we wish to imbibe in the Education Megaproject.

However , the ultimate choice of the Technology platform for the Megaproject will be made by the Project Authorities based on a tendering process involving competing products by technology vendors. The designers of the Education Megaproject do not intend the inclusion of the names of any particular vendor to be an endorsement of their products but just their ideas which are excellent. Government of India / ISIC is free to choose products from a range of competitors in the market.

The Indian Primary & Secondary Education Megaproject

Project Design Basis Document



A Philosophy For Education

Swami Vivekananda

**Religion is the Innermost core of Education**

**“ But no scriptures can make us Religious ... You cannot satisfy my curiosity to see a country by showing me a map ”.**

“ Let the watchword be acceptance and not exclusion. Not only toleration , for so called toleration is blasphemy. Toleration means that I think you are wrong and I am just allowing you to live. Is it not blasphemy to think that you and I are allowing others to live ? I accept all religions that were in the past and worship them all. I worship God with every one of them, in whatever form they worship him. I shall go to the mosque of the Mohammedan ; I shall enter the Christian’s church and kneel before the crucifix. I shall enter the Buddhist temple where I shall take refuge in Buddha and in his law. I shall go into the forest and sit down in meditation with the Hindu, who is trying to see the light which enlightens the heart of everyone.

Not only shall I do all these things but I shall keep my heart open for all that may come in the future . **Is Gods book finished ?** Or is it still a continuous revelation going on ? It is a marvelous book – these spiritual revelations of the world . **The Bible , The Vedas , The Koran** and all other sacred books are but so many pages and an infinite number of pages remain to be unfolded ”.

A nation is advanced in proportion as education and intelligence spread among the masses  
The chief cause of India’s ruin has been the monopolizing of the whole education and intelligence of the land among a handful of men. The only service to be done for our lower classes is to give them education to develop their individuality. **So long as millions live in hunger and ignorance, I hold every man a traitor who, having been educated at their expense, pays not the least heed to them.**

The text that follows has been compiled from Speeches and writings of Swami Vivekananda by **Shri. TS Avinashilingam**. The 5<sup>th</sup> edition of the book was published in 1957 by the Ramakrishna Mission. The whole book has been copied for the purposes of the Education Megaproject. The main ideas have been highlighted in red or are underlined for easy reference.

### Central Philosophy

Education is the manifestation of the perfection already in man.

Knowledge is inherent in man, no knowledge comes from outside; it is all inside. What we say a man ' knows ', should in strict psychological language , be what he ' discovers ' or ' unveils '.

What a man ' learns ' is really what he ' discovers ' by taking the cover off his own soul, which is a mine of infinite knowledge. We say Newton discovered gravitation. Was it sitting anywhere in a corner waiting for him ? It was in his own mind; the time came and he found it out. All knowledge that the world has ever received comes from the mind; the infinite library of the universe is in your own mind. **The external world is simply the suggestion, the occasion , which sets you to study your own mind.** The falling of an apple gave the suggestion to Newton , and he studied his own mind. He rearranged all the previous links of thought in his mind and discovered a new link among them, which we call the law of gravitation. It was not in the apple nor in anything in the centre of the earth.

### All Knowledge Is Within

All knowledge therefore, secular or spiritual, is in the human mind. In many cases it is not discovered , but remains covered, and when the covering is being slowly taken off, we say ' we are learning ' , and the advance of knowledge is made by the advance of this process of un-covering . The man from whom this veil is being lifted is the more knowing man; the man upon whom it lies thick is ignorant; and the man from whom it is entirely gone is all-knowing, omniscient. Like fire in a piece of flint, knowledge exists in the mind; suggestion is the friction which brings it out. All knowledge and all power are within. What we call powers , secrets of nature, and force are all within. All knowledge comes from the human soul. Man manifests knowledge, discovers it within himself, which is pre-existing, through eternity.

No one was ever really taught by another. Each of us has to teach himself. The external teacher offers only the suggestion which rouses the internal teacher to work to understand things. Then things will be made clearer to us by our own power of perception and thought, and we shall realize them in our own souls.

### A Key Question for Thinkers on Education

All existing programmes of the Government of India and indeed western education seek to make people literate as a Minimum . Swami Vivekananda gives a totally new perspective and forces us to ask ourselves... “ **Who are we trying to make literate ?** ”

He then goes on to say “**Within man is all knowledge , and it requires only an awakening, and that much is the work of a teacher .**”

Swami Vivekanand therefore is saying that the teachers main role is to help the student discover himself ( i.e. his own soul ) .

## Infinite Power Is In The Soul

The whole of the big banyan tree which covers acres of ground was in the little seed which was perhaps no bigger than one-eighth of a mustard seed. All that mass and energy was there confined. The gigantic intellect, we know, lies coiled up in a protoplasmic cell. It may seem like a paradox but it is true. Each one of us has come out of one protoplasmic cell, and all the powers we possess were coiled up there. You cannot say they came from food, for if you heap up food mountains high, what power comes out of it? The energy was there, potentially no doubt, but still there. So is infinite power in the soul of man whether he knows it or not. Its manifestation is only a question of being conscious of it.

The divine light within is obscured in most people. It is like a lamp in a cask of iron: no gleam of light can shine through. Gradually by purity and un-selfishness, we can make the obscuring medium less and less dense, until at last it becomes as transparent as glass. Sri Ramakrishna was like the iron cask transformed into a glass cask, through which we can see the inner light as it is.

You cannot teach a child any more than you can grow a plant. The plant develops its own nature. The child also teaches itself. But you can help it go forward in its own way. What you can do is not of a positive nature but negative. You can take away the obstacles, and knowledge comes out of its own nature. Loosen the soil a little, so that it may come out easily. Put a hedge round it; see that it is not killed by anything. You can supply the growing seed with the materials for the making of its body, bringing to it the earth, the water, the air that it wants. And there your work stops. It will take all that it wants by its own nature.

So with the education of a child. A child educates itself. The teacher spoils everything by thinking that he is teaching. Within man is all knowledge, and it requires only an awakening, and that much is the work of a teacher. We have only to do so much for the boys that they may learn to apply their own intellect to the proper use of their hands, legs, ears and eyes.

## Free Growth & Positive Ideas

That system which aims at educating our boys in the same manner as that of the man who battered his ass, being advised that it could thereby be turned into a horse, should be abolished. Owing to undue domination exercised by the parents, our boys do not get free scope for growth. In every one there are infinite tendencies which require proper scope for satisfaction. **Violent attempts at reform always end by retarding reform.** If you do not allow one to become a lion, one will become a fox.

**We should give positive ideas, negative thoughts only weaken men.** Do you not find that where parents are constantly taxing their sons to read and write, telling them that they will never learn anything and calling them fools and so forth, the latter do actually turn out to be so in many cases? If you speak kind words to them and encourage them, they are bound to improve in time. If you give them positive ideas, people will grow up to be men and learn to stand up on their own legs. In language and literature, in poetry and arts, in everything we must point out not the mistakes that people are making in their thoughts and actions, but the way in which they will be able to do these things better.

## Man Making Education

The teaching must be modified according to the needs of the taught. Past lives have moulded our tendencies, and so give to the pupil according to his tendencies. Take everyone where he stands and push him forward. We have seen how Sri Ramakrishna

would encourage even those whom we considered worthless and change the very course of their lives thereby ! He never destroyed a single man's special inclinations. He gave words of hope and encouragement even to the most degraded of persons and lifted them up.

Liberty is the first condition of growth. It is wrong, a thousand times wrong, if any of you dares say , ' I will work out the salvation of this woman and child.' Hands off ! They will solve their own problems. Who are you to assume that you know everything. How dare you think that you have the right over God. For , don't you know that every soul is the soul of God ? Look upon everyone as God. You can only serve. Serve the children of the Lord if you have the privilege. If the Lord grants that you can help any one of His children blesses you are. Blessed you are , that that privilege was given to you when others had it not. Do it only as worship.

Education is not the amount of information that is put into your brain and runs riot there, undigested all your life. **We must have life – building, man making , character –making , assimilation of ideas.** If you have assimilated five ideas and make them your life and character , you have more education than any man who has got by heart a whole library. If education were identical with information , the libraries would be the greatest sages of the world.

Getting by heart the thoughts of others in a foreign language and stuffing your brain with them and taking some university degrees, you consider yourself educated. Is this education ? What is the goal of your education ? Either a clerkship, or being a lawyer , or at the most a deputy magistrate, which is another form of clerkship – isn't that all ? What good will it do to you or to the country at large ?

Open your eyes and see what a piteous cry for food is rising in the land of Bharata, proverbial for its food. Will your education fulfil this want ? The education that does not help the common mass of people to equip themselves for the struggle of life, which does not bring out strength of character, a spirit of philanthropy and the courage of a lion – is it worth the name ?

**We want that education by which character is formed, strength of mind is increased , the intellect is expanded and by which one can stand on one's own feet.** What we need is to study , independent of foreign control, different branches of knowledge that is our own , and with it the English language and western science; we need technical education and all else that will develop industries , so that men instead of seeking for service , may earn enough to provide for themselves and save against a rainy day.

**The end of all education , all training , should be man-making.** The end and aim of all training is to make the man grow. The training by which the current and expression of will are brought under control and become fruitful , is called education. What our country now wants are muscles of iron and nerves of steel , gigantic wills which nothing can resist , which can penetrate into the mysteries and secrets of the universe and will accomplish their purpose in any fashion , even if it meant going down to the bottom of the ocean, meeting death face to face. **It is man-making education that we want. It is man-making theories that we want. It is man-making education all around that we want.**

## 2. The Only Method Of Education

### Concentration

There is only one method by which to attain knowledge, that which is called concentration. **The very essence of education is concentration of mind.** From the lowest man to the highest yogi, all have to use the same method to attain knowledge. The chemist who works in his laboratory concentrates all the powers of his mind, brings them into one focus, and throws them on the elements; the elements stand analysed, and thus his knowledge comes. The astronomer concentrates the powers of his mind and brings them into one focus; and he throws them on to the objects through his telescope; the stars and the systems roll forward and give up their secrets to him. So it is in every case: with the professor in his chair, the student with his book, with every man who is working to know.

The more the power of concentration, the greater the knowledge that is acquired. Even the lowest shoemaker, if he gives more concentration will make shoes better. The cook with concentration will cook a meal all the better. In making money or in worshipping god, or in doing anything, the stronger the power of concentration, the better will that thing be done. This is the one call, the one knock, which opens the gates of nature, and lets out floods of light.

### Difference In Degree

Ninety percent of thought force is wasted by the ordinary human being and therefore he is constantly committing blunders. **The trained man or mind never makes a mistake.** The main difference between men and the animals is the difference in their powers of concentration. An animal has very little powers of concentration. Those who have trained animals find much difficulty in the fact that the animal is constantly forgetting what is told him. He cannot concentrate his mind upon anything for a long time. Herein is the difference between man and animals.

This difference in their powers of concentration also constitutes the difference between man and man. Compare the lowest with the highest man. The difference is in the degree of concentration. All success in any line of work is the result of this. High achievements in arts, music, etc., are the result of concentration. When the mind is concentrated and is turned back on itself, all within us (i.e. the sense organs) will be our servants, not our masters. The Greeks applied their concentration to the external world and the result was perfection in art, literature etc. The Hindu concentrated on the internal world, upon the unseen realms in the self and developed the science of yoga.

### Only Key To Knowledge

The world is ready to give up its secrets if we only know how to knock, how to give the necessary blow. The strength and the force of the blow come through concentration. The power of concentration is the only key to the treasure-house of knowledge. In the present state of our body we are much distracted, and the mind is frittering away its energies upon a hundred things. As soon as I try to call on my thoughts and concentrate my mind upon any object of knowledge, thousands of undesired impulses rush into the brain, thousands of thoughts rush into the mind and disturb it. How to check it and bring the mind under control is the whole subject of study under Rajayoga. The practice of meditation leads to mental concentration.

To me the very essence of education is the concentration of mind, not the collection of facts. If I had to do my education once again, I would not study facts at all. I would develop the power of concentration and detachment , and then with a perfect instrument , collect facts at will.

Power comes to him who observes unbroken Brahmacharya for a period of 12 years. Complete continence gives great intellectual and spiritual power. Controlled desire leads to the highest results. Transform the sexual energy to spiritual energy. The stronger this force, the more can be done with it. Only a powerful current of water can do hydraulic mining. It is owing to want of continence that everything is on the brink of ruin in our country. **By observance of strict Brahmacharya all learning can be mastered in a very short time;** one acquires an unfailing memory of what one hears or knows but once. The chaste brain has tremendous energy and gigantic will power. Without chastity there can be no spiritual strength. Continence gives wonderful control over mankind. The spiritual leaders of men have been very continent and this is what gave them power.

Every boy must be trained to practice absolute Brahmacharya and then , and then alone faith and shraddha will come. Chastity in thought , word and deed always and in all conditions is what is called Brahmacharya. Unchaste imagination is as bad as unchaste action. The Brahmacharin must be pure in thought, word and deed.

The idea of true Shraddha must be brought back once more to us. The faith in our own selves must be reawakened and then only all the problems which face our country will gradually be solved by ourselves. What we want is this Shraddha. What makes the difference between man and man is the difference in the Shraddha and nothing else. What makes one man great and another weak and low is this shraddha. My master used to say: he who thinks himself weak will become weak; and that is true. This Shraddha must enter into you. Whatever of material power you see manifested by the western races, is the outcome of this Shraddha , because they believe in their muscles ; and if you believe in the spirit how much more will it work.

**I beg of you to understand this one fact, no good comes out of the man who day and night thinks he is nobody.** If a man day and night thinks he is miserable , low and nothing, nothing he becomes. If you say “ I am , I am “ so shall you be. This is the great fact you ought to remember. We are children of the Almighty , we are sparks of the infinite divine fire. How can we be nothings ? We are everything, ready to do everything; we can do everything. This faith in ourselves was in the heart of our ancestors; this faith in themselves was the motive power that pushed them forward in the march of civilization . If there has been degeneration , if there has been defect , you will find that degeneration to have started on the day our people lost faith in themselves.

To preach the doctrine of Shraddha or genuine faith is the mission of my life. Let me repeat to you that this faith is one of the most potent factors of humanity. **First have faith in yourselves.** Know that though one may be a little bubble and another may be a mountain-high wave , yet behind both the bubble and the wave there is the infinite ocean. The infinite ocean is the background of me as well as you. Mine also is that infinite ocean of life, of power , of spirituality as well as yours. Therefore , my brethren , teach this life –saving , great ennobling , grand doctrine to your children from their very birth.

### 3. Education For Character

#### Value Of Thought Force

The character of any man is but the aggregate of his tendencies, the sum total of the bent of his mind. As pleasure and pain pass before the soul, they leave upon it different pictures, and the result of these combined impressions is what is called a man's character. **We are what our thoughts have made us.** Each thought is a little hammer blow on the lumps of iron which are bodies are, manufacturing out of it what we want it to be. **Words are secondary, thoughts live, they travel far. And so, take care of what you think.**

#### The Role Of Pleasure And Pain

Good and evil have an equal share in moulding character and in some cases misery is a greater teacher than happiness. In studying the great characters the world has produced, I daresay, in the vast majority of cases, it would be found that it was misery that taught more than happiness, it was poverty that taught more than wealth and it was blows that brought out their inner fire more than praise. Brought up in the lap of luxury, lying on a bed of roses and never shedding a tear, who has become great? When there comes affection in the heart, when the storm of sorrow blows all around, and it seems as if light will be seen no more, when hope and courage are almost gone, it is then, in the midst of this great spiritual tempest, that the light within gleams.

#### Result Of Action

Using the simile of a lake for the mind, every ripple, every wave that rises in the mind, when it subsides, does not die out entirely, but leaves a mark and future possibility of that mark coming out again.... Every work that we do, every movement of the body, every thought that we think, leaves such an impression on the mind-stuff and even when such impressions are not obvious on the surface, they are sufficiently strong to work beneath the surface subconsciously. What we are at every moment is determined by the sum total of these impressions. If good impressions prevail, the character becomes good, if bad it becomes bad. If a man continuously hears bad words, thinks bad thoughts, does bad actions, his mind will be full of bad impressions; and they will influence his thought and work without his being conscious of the fact. In fact these bad impressions are always working. The sum total of these impressions in him will create the strong motive power for doing bad actions. He will be like a machine in the hands of his impressions.

#### Formation Of Character

Similarly if a man thinks good thoughts and does good work, the sum total of these impressions will be good and they in a similar manner will force him to do good in spite of himself. When a man has done so much good work and thought so many good thoughts, there is an irresistible tendency in him to do good. Even if he wishes to do evil, his mind as the sum total of his tendencies, will not allow him to do so. He is completely under the influence of the good tendencies. When such is the case, a man's good character is said to be established. **If you really want to judge the character of a man, look not at his great performances. Watch a man do his most common actions;** those are indeed the things which will tell you the real character of a great man. Great occasions rouse even the lowest of human beings to some greatness, but he alone is really great whose character is great always – the same wherever he be.

When a large number of these impressions is left on the mind , they coalesce and become a habit. It is said “ Habit is second nature “. It is first nature also and the whole nature of man. Everything that we are is a result of habit ... That gives us consolation because, if it is only habit, we can make it and unmake it at any time. **The only remedy for bad habits is counter habits.** All the bad habits can be controlled by good habits. Go on doing good , thinking holy thoughts continuously. That is the only way to suppress base impressions. **Never say any man is hopeless,** because he only represents a character, a bundle of habits, which can be checked by new and better ones. Character is repeated habits and repeated habits alone can reform character.

**The cause of all apparent evil is ourselves.** Do not blame any supernatural being. Neither be hopeless or despondent, nor think that we are in a place from where we can never escape unless someone comes and gives us a helping hand. We are like silkworms. We make the thread of our own substance and spin a cocoon, and in course of time are imprisoned inside. The network of Karma we have woven around ourselves. And in our ignorance we feel as if we are bound, and weep and wail for help. **But help does not come from without; it comes from within ourselves.** Cry to all the gods of the Universe. I cried for years and in the end I found that I was helped , but that help came from within. And I had to undo what I had done by mistake. I had to cut the net which I had thrown around myself. I have committed many mistakes in my life . But mark you without those mistakes, I should not be what I am today. I do not mean that you are to go home and willfully commit mistakes, do not misunderstand me in that way. But do not mope because of the mistakes you have committed.

We commit mistakes because we are weak , and we are weak because we are ignorant. Who makes us ignorant ? We ourselves. **We keep our hands over our eyes and weep that it is dark. Take the hands away and there is light.** The light exists always for us, the self effulgent nature of the human soul. Do you not hear what modern scientific men say ? What is the cause of evolution ? Desire. The animal wants to do something but does not find the body suitable and therefore develops a new body. Who develops it ? The animal itself: its will. Continue to exercise your will and it will take you higher. The will is almighty. If it is almighty, you may say: Why cannot I do everything ? But you are thinking only for your little self.

Look back on yourself from the state of the Amoeba to the human being; who made all that ? Your own will . Can you deny that it is almighty ? That which has made you come up so high , can make you go higher still. What you want is character , strengthening of the will.

If you go home and sit in sack-cloth and ashes, and weep your lives out because you took certain false steps, it will not help you, but will weaken you all the more. **If this room is full of darkness for thousands of years and you come in and begin to weep and wail, will the darkness vanish ? Strike a match and light comes in a moment.** What good will it do to you to think all your lives, ‘ Oh, I have done evil; I have made many mistakes .’? It requires no ghost to tell us that. Bring in light and evil goes in a moment. Build up your character and manifest your real nature, the effulgent , the resplendent , the ever – pure and call it up in every one you see.

## 4. Development Of Personality

### Personal Magnetism

You see what is happening all around us. The world is one of influence. Part of our energy is used up in the preservation of our bodies. Beyond that, every particle of our energy is day and night being used in influencing others. Our bodies, our virtues, our intellect, and our spirituality. All of these are continuously influencing others; and so, conversely, we are being influenced by them. This is going on all around us.

Now to take a concrete example: a man comes, you know he is learned, his language is beautiful and he speaks to you by the hour – but he does not make any impression. Another man comes, he speaks a few words, not well-arranged, ungrammatical perhaps; all the same, he makes an immense impression. Many of you have seen that. So it is evident that words alone cannot always produce an impression. Words, even thoughts, contribute only one-third of the influence in making an impression, the man, two-thirds. What you call the personal magnetism of the man – that is what goes out and impresses you.

Coming to great leaders of mankind, we always find that it was the personality of the man that counted. Now, take all the great authors of the past, the great thinkers. Really speaking, how many thoughts have they thought? Take all the writings that have been left to us by the past leaders of mankind; take each one of their books and appraise them. The real thoughts, new and genuine, that have been thought in this world up to this time, amount to only a handful. Read in their books the thoughts that they have left us. The authors do not appear to be giants to us, and yet we know that they were great giants in their days. What made them so? Not simply the thoughts they thought, neither the books they wrote, nor the speeches they made, it was something else that is now gone, that is their personality. As I have always remarked, the personality of the man is two thirds, and his intellect, his words, are but one-third. It is the real man, the personality of the man, that runs through us. Our actions are but effects. Actions must come when the man is there; the effect is bound to follow the cause.

**The ideal of all education, all training, should be this man – making. But instead of that, we are always trying to polish up the outside. What use polishing up the outside when there is no inside?** The end and aim of all training is to make the man grow. The man who influences, who throws his magic, as it were upon his fellow beings, is a dynamo of power, and when that man is ready, he can do anything and everything he likes: that personality put upon anything will make it work.

Now we see that though this is a fact, no physical laws that we know of will explain this. How can we explain it by chemical and physical knowledge? How much of oxygen, hydrogen, carbon – how many molecules in different positions, how many cells, etc., etc., can explain this mysterious personality? And we still see, it is a fact, and not only that, it is the real man; and it is that man that lives and moves and works, it is that man that influences, moves his fellow beings and passes out, and his intellect and books and works are but traces left behind.

Think of this. Compare the great teachers of religion with the great philosophers. The philosophers scarcely influenced anybody's inner man, and yet they wrote most marvelous books. The religious teachers, on the other hand, moved countries in their lifetime. The difference was made by personality. In the philosopher it is a faint personality that influences; in the great prophets it is tremendous. In the former we touch the intellect, in the latter we touch life. In the one case, it is simply a chemical process, putting certain chemical ingredients together which may gradually combine and under proper circumstances bring

out a flash of light or may fail. In the other , it is a torch that goes around quickly, lighting others.

The science of Yoga claims that it has discovered the laws which develop this personality, and by proper attention to those laws and methods, each one can grow and strengthen his personality. This is one of the great practical things and this is the secret of all education. This has a universal application. In the life of the householder , in the life of the poor , the rich, the man of business, the spiritual man, in everyone's life , it is a great thing , the strengthening of this personality. They are laws , very fine, which are behind the physical laws, as we know. That is to say that there are no such realities as a physical world , a mental world . a spiritual world. Whatever is , is one.

Let us say it is a sort of tapering existence, the thickest part is here, it tapers and becomes finer and finer; the finest is what we call the spirit; the grossest , the body. And just as it is here, in the microcosm, it is exactly the same in the macrocosm. This universe of ours is exactly like that: it is the gross external thickness, and it tapers into something finer and finer until it becomes God.

We also know that the greatest power is lodged in the fine, not in the course. We see a man take up a huge weight, we see his muscles swell, and all over his body we see signs of exertion, and we think the muscles are powerful things. But it is the thin thread like things, the nerves, which bring power to the muscles; the moment one of these threads is cut off from reaching the muscles, they are not able to work at all. These tiny nerves bring the power from something finer still – thought , and so on. So, it is the fine that is really the seat of power . Of course we can see the movements in the gross; but when fine movements take place, we cannot see them. When a gross thing moves, we catch it, and thus we naturally identify movement with things that are gross.

But all the power is really in the fine, perhaps because the movement is so intense that we cannot perceive it. But if by any science , any investigation, we are helped to get hold of these finer forces which are the cause of the expression , the expression itself will be under control. There is a little bubble coming from the bottom of a lake; we do not see it coming all the time, we see it only when it bursts on the surface; so , we can perceive thoughts only when they develop a great deal, or after they become actions. We constantly complain that we have no control over our actions, over our thoughts. But how can we have it ? If we get control over the fine movements , if we can get hold of thought at the root , before it has become thought, before it has become action, then it would be possible for us to control the whole.

Now if there is a method by which we can analyze , investigate, understand and finally grapple with those finer powers , the finer causes, then alone is it possible to have control over ourselves, and the man who has control over his own mind assuredly will have control over every other mind. That is why purity and morality has been always the object of religion; a pure, a moral man has control of himself. And all minds are the same, different parts of one mind. He who knows one lump of clay has known all the clay in the universe. He who knows and controls his own mind knows the secret of every mind and has power over every mind.

Each man in his childhood runs through the stages through which his race has come up; only the race took thousands of years to do it, while the child takes a few years. **The child is first the old savage man – and he crushes the butterfly under his feet.** The child is at first like the primitive ancestors of his race. As he grows, he passes through different stages until he reaches the development of his race. Only he does it swiftly and quickly. Now, take the whole of humanity as a race, or take the whole of the animal creation, man and the lower animals as one whole. There is an end towards which the whole is moving. Let us call it

perfection. Some men and women are born who anticipate the whole progress of mankind. Instead of waiting and being reborn over and over again for ages until the whole human race has attained to that perfection, they , as it were, rush through them in a few short years of their life. And we know we can hasten these processes , if we be true to ourselves. If a number of men, without any culture, be left to live upon an island, and are given barely enough food, clothing and shelter, they will gradually go on and on , evolving higher and higher stages of civilization. We also know that this growth can be hastened by additional means . We help the growth of trees , do we not ? Left to nature they would have grown , only they would have taken a longer time; we help them to grow in a shorter time than they would otherwise have taken. We are doing all the time the same thing, hastening the growth of things by artificial means. **Why cannot we hasten the growth of man ? We can do that as a race.**

**Why are teachers sent to other countries ? Because by these means we can hasten the growth of races.** Now can we not hasten the growth of individuals ? We can. Can we put a limit to the hastening ? We cannot say how much a man can grow in one life. You have no reason to say this much a man can do and no more . Circumstances can hasten him wonderfully. Can there be any limit then, till you come to perfection ? So what comes of it ? That perfect man, that is to say , the type that is to come of this race, perhaps millions of years hence , that man , can come today.

### **Incarnations & Prophets**

All great incarnations and Prophets are such men; they have reached perfection in this one life. We have had such men at all periods of the worlds history and at all times. Quite recently there was such a man who lived the life of the whole human race and reached the end - even in this life. Even this hastening of the growth must be under laws. Suppose we can investigate these laws and understand their secrets and apply them to our own needs ; it follows that we grow. We hasten our growth, we hasten our development, and we become perfect, even in this life. This is the higher part of our life, and the science of the study of mind and its powers has this perfection as its real end.

The utility of this science is to bring out the perfect man, and not let him wait and wait for ages, just a play-thing at the hands of the physical world, like a log of drift-wood carried from wave to wave and tossing about in the ocean. This science wants you to be strong, to take the work in your own hand, instead of leaving it in the hands of nature, and get beyond this little life.

## 5. The Teacher and the Taught

### Tyagis As Teachers

My idea of education is Gurugrha-vasa. Without the personal life of the teacher , there would be no education. One should live from his very boyhood with one whose character is a blazing fire and should have before him a living example of the highest teaching. In our country the imparting of knowledge has always been through men of renunciation. The charge of imparting knowledge should again fall upon the shoulders of Tyagis.

The old system of education in India was very different from the modern system. The students had not to pay. It was thought that knowledge is so sacred that no man ought to sell it. Knowledge should be given freely and without any price. The teachers used to take students without charge and not only so, most of them gave their students food and clothes. To support these teachers , the wealthy families made gifts to them and they in turn had to maintain their students. The disciple of old used to repair to the hermitage of the Guru, fuel in hand , and the Guru, after ascertaining his competence , would teach him the Vedas , fastening around his waist the three fold filament of Munja , a kind of grass, as the emblem of his vow to keep his body , mind and speech in control.

### The Qualities Of The Taught

There are certain conditions necessary in the taught and the teacher. The conditions necessary for the taught are purity, a real thirst after knowledge and perseverance. Purity in thought , speech and act is absolutely necessary. As for thirst after knowledge, it is an old law that all get whatever we want. None of us can get anything other than what we fix our hearts upon. There must be a continuous struggle, a constant fight , an unremitting grappling with our lower nature, till the higher want is actually felt and victory achieved. The student who sets out with such a spirit of perseverance will surely find success at last.

### The Teacher : His Qualifications

In regard to the teacher, we must see that he knows the spirit of the scriptures. The whole world reads Bibles, Vedas and Korans; but they are all only words, syntax, etymology, philology – the dry bones of religion. The teacher who deals too much in words and allows the mind to be carried away by the force of word loses the spirit. It is knowledge of the spirit of the scriptures alone that constitutes the true teacher. The second condition necessary for the teacher is sinlessness. The question is often asked : ‘ Why should we look into the character and personality of the teacher ?’. This is not right. The sine qua non of acquiring truth for oneself , or for imparting to others , is purity of heart and soul. He must be perfectly pure and only then comes the value of his words. The function of the teacher is indeed an affair of the transference of something and not of mere stimulation of existing intellectual or other faculties in the taught.

Something real and appreciable as an influence comes from the teacher and goes into the taught. Therefore the teacher must be pure. The third condition is in regard to the motive. The teacher must not teach with any ulterior selfish motive, for money, name or fame. His work must be simply out of love, out of pure love for mankind at large. The only medium through which spiritual force can be transmitted is love. Any selfish motive , such as the desire for gain or name , will immediately destroy the conveying medium.

### On The Qualities To Be Possessed By A Guru

In his book “ Spiritual Yoga for the millions “ , Edward Albertson , has , very beautifully narrated Sri Ramakrishna’s views on the traditional Indian concept of a teacher.

Sri Ramakrishna once told a story of three friends who were walking through the countryside when they came upon a place that had been enclosed within a high wall. They could hear sounds of merriment coming from behind the wall and became curious as to what might be going on. They could find no way of scaling the wall until, having proceeded a little further, they saw a tree , one of the branches of which extended over the top of the barrier. One of the friends offered to climb up, promising to report what he saw, so that, if it was worth their effort, the others could climb up too. But once he reached the top and looked over into the garden beyond, he forgot his promise and began to dance and sing. The world, his family, his friends were all forgotten as he jumped down the far side.

The two remaining friends were disappointed, but one of them said he would climb up and would not forget to report what he could see. However, he too became so enraptured at what he was seeing that he also disappeared over the wall. Now there remained only one, and he thought to himself, “ I also must see what is so wonderful beyond that wall , but someone must stay behind to tell other travelers of what is to be seen. ” He climbed the tree, but before permitting himself to be swept away by whatever had so taken his companions, he tied himself to the branch. Then upon opening his eyes, he too became ecstatic, but having bound himself to the service of others , he remained behind as a teacher to show the way.

This is the nature and these are the qualifications, of the true teacher, the guru who will lead his disciples along the road to liberation. Only such a man can be a guru; those of lesser attainment are not equipped to teach the way. In Luke 6:39 we can read this truth in a well known question “ Can the blind lead the blind ? Shall they not both fall into the ditch ? ”

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While the above example by Sri Ramakrishna specifically explains the qualifications of a spiritual guru , in terms of the needs of India of today , it is no less relevant to the issue of what kinds of qualities we must have in men and women in India today who will teach our children far simple things such as reading and writing and subjects such as geography, history , language, science and mathematics.

Today , due to decades of un-pardonable neglect on the part of Indian planners and policy makers in government , we are in a situation where a BEd in teaching or a lecturer who is an MA in economics gets as much as a welder or a crane operator with 5 – 7 years of experience. This has led to warped economic choices and the worst qualified are getting into jobs where they with their third rate inputs will affect our children and tomorrows future citizens , thereby bringing into question , the very future of the Indian state.

Since the problem is huge , there is a need for a massive project which will alter the economic choices and once again attract the best of Indian minds into education. This project therefore is not just about building a lot of schools.

**India reached the height of its glory under the teacher,** The Indian Primary & Secondary Education Mega Project, seeks to take India back to its roots by restoring to the teacher that place which is rightfully his .

It is not easy to be a disciple. The first condition is that the student who wants to know the truth must give up all desires for gain. What we see is not truth as long as any desire creeps into our minds. **So long as there is in the heart the least desire for the world , truth will not come.** The rich understand truth much less than the poor people. The rich man has no time to think of anything beyond his wealth and power , his comforts and indulgences. I do not

trust the man who never weeps; he has a big block of granite where his heart should be. Therefore knowing what prosperity means and what happiness means , one should give up these and seek to know the truth and truth alone.

**Unselfishness is more paying , only people have not the patience to practice it.** It is more paying from the point of view of health also. Love, truth and unselfishness are not merely moral figures of speech , but they form our highest ideal, because in them lies such a manifestation of power. Self-restraint is a manifestation of greater power than all outgoing action. All outgoing energy following a selfish motive is frittered away; it will not cause power to return to you; but if restrained , it will result in the development of power. **This self control will tend to produce a mighty will, a character which makes a Christ or a Buddha.**

The second condition is that a disciple must be able to control the internal and external senses. By hard practice he has to arrive at the stage where he can assert his mind against the commands of nature. He should be able to say to his mind , ‘ You are mine ; I order you, do not see or hear anything .’ Next the mind must be made to quiet down. It is rushing about. Just as I sit down to meditate , all the vilest subjects in the world come up. The whole thing is nauseating. Why should the mind think thoughts I do not want it to think ? I am , as it were, a slave to the mind. No spiritual knowledge is possible so long as the mind is restless and out of control. The disciple has to learn to control the mind.

Also , the disciple must have great power of endurance. Life seems comfortable, and you find the mind behaves well when everything is going well with you. But if something goes wrong, your mind loses its balance. This is not good. Bear all evil and misery without one murmur or hurt, without one thought of unhappiness, resistance, remedy or retaliation. That is true endurance. When my master , Sri Ramakrishna fell ill, a brahmin suggested to him that he apply his tremendous mental power to cure himself; he said that if my Master would only concentrate his mind on the diseased part of the body, it would heal. Sri Ramakrishna answered, “ **What ! Bring down the mind that I’ve given to God to this little body !**” He refused to think of body and illness . His mind was continually conscious of God; it was dedicated to him utterly. He would not use it for any other purpose. **Remember also the man on the cross ! He pitied those who crucified him.** He endured every humiliation and suffering. He took the burden of all upon himself: “ Come unto me. All ye that labour and are heavy laden, and I will give you rest. “ Such is true endurance . How very high he was above this life, so high that we cannot understand it !

The next condition the disciple must fulfil is to conceive an extreme desire to be free. **No one is desiring anything beyond the body. What is the world but a combination of stomach and sex ?** Look at the millions of men and women – that is what they are living for. Take these away from them and they will find their life empty, meaningless and intolerable. Such are we. And such is our mind; it is continually hankering for ways and means to satisfy the hunger for the stomach and sex. These desires of the body bring only momentary satisfaction and endless suffering. It is like drinking a cup of which the surface layer is nectar , while underneath all is poison. But we still hanker for all these things. Renunciation of the senses and desires is the only way out of this misery . If you want to be spiritual , you must renounce. This is the real test. Give up the world – this nonsense of the senses. There is only one real desire: to know what is true, to be spiritual. No more materialism, no more this egoism. **I must become spiritual. Strong, intense must be the desire.** If a man’s hands and feet are tied that he could not move and then if a burning piece of charcoal were placed on his body, he would struggle with all his power to throw it off. When I shall have that sort of extreme desire, that restless struggle to throw off this burning world, then the time will have come for me to glimpse the divine truth.

**Our sole concern should be to know the highest truth. Our goal is the loftiest.** Let us worship the spirit in the spirit, standing on spirit. Let the foundation be spirit; the middle , spirit; the

culmination, spirit. Stand thou in the spirit! **That is the goal. We know we cannot reach it yet. Never mind. Do not despair, but do not drag the ideal down.** **The important thing is : how much less you think of the body , of yourself as matter , as dead, dull, insentient matter , how much more you think of yourself as the shining immortal being.** The more you think of yourself as shining immortal spirit, the more eager you will be to be absolutely free of matter, body and senses. This is the intense desire to be free.

There are conditions which a man who wants to be a disciple must fulfil; without fulfilling them he will not be able to come in contact with the true Guru. And even if he is fortunate enough to find him, he will not be quickened by the power that the guru may transmit. There cannot be any compromising of these conditions. With the fulfillment of these conditions the lotus of the disciple's heart will open and the bee shall come. **Then the disciple knows that the Guru was within himself.** He opens out. He realizes. He crosses the ocean of life, goes beyond , and in mercy, without a thought of gain or praise , he in his turn helps others to cross.

With the teacher our relationship is the same as that between an ancestor and his descendant. Without faith, humility, submission and veneration in our hearts towards the teacher, there cannot be any growth in us. **In those countries which have neglected to keep up this kind of relation, the teacher has become a mere lecturer ,** the teacher expecting his five dollars and the person taught expecting his brain to be filled with the teacher's words and each going his own way after this much is done. But too much faith in personality has the tendency to produce weakness and idolatry. Worship your Guru as God, but do not obey him blindly. Love him all you will , but think for yourself.

The teacher must throw his whole force into the tendency of the taught. **Without real sympathy we can never teach well. Do not try to disturb the faith of any man. If you can, give him something better, but do not destroy what he has.** The true teacher is he who can convert himself , as it were , into a thousand persons at a moment's notice. The true teacher is he who can immediately come down to the level of the student, and transfer his soul to the student's soul and see through and understand his mind. Such a teacher can really teach and none else.

## 6. Religious Education

### Worship Of Saints

Religion is the innermost core of education. I do not mean my own or any one else's opinion about religion. The true eternal principles have to be held before the people. First of all we have to introduce the worship of great saints. Those great-souled ones who have realized the eternal truths, are to be placed before the people as the ideals to be followed – Mahavira , the Buddha, Sri Ramachandra, Shri Krishna, Christ , Sri Ramakrishna and others. Keep aside for the present the Vrindavan aspect of Sri Krishna and spread far and wide the worship of Sri Krishna roaring out the Gita with the voice of a lion, and bring into daily use the worship of Shakti – The divine mother, the source of all power. We now mostly need the ideal of the hero with the tremendous spirit of Rajas thrilling through his veins from head to foot – the hero who will dare and die to know the truth, the hero whose armour is renunciation, whose sword is wisdom. We now want the spirit of the brave warrior in the battle-field.

Make the character of Mahavira your ideal. At the command of Ramachandra he crossed the ocean! He had no care for life or death. He was a perfect master of the senses and wonderfully sagacious. Build your life on this great ideal of personal service. Through that ideal all the other ideas will gradually manifest in life. Obedience of the Guru without questioning and strict observance of Brahmacharya – this is the secret of success. As on the one hand Hanuman represents the ideal of service , so on the other he represents leonine courage, striking the world with awe. He has not the least hesitation in sacrificing his life for the good of Rama. A supreme indifference for everything except the service of Rama. Only the carrying out of Sri Rama's behest is the one vow of his life. Such whole-hearted devotion is wanted.

At the present time the worship of the divine play of Sri Krishna with the Gopis is not good. Playing on the flute and so on will not regenerate the country. Playing on the khol and kartal and dancing in the frenzy of the kirtana has de-generated the whole people. In trying to imitate the highest Sadhana , the preliminary qualification of which is absolute purity , they have been swallowed in dire tamas. Are not drums made in the country ? Are not trumpets and kettle drums available in India ? Make the boys hear the the deep toned sound of these instruments. Hearing from boyhood the sound of effeminate forms of music , the country is well-nigh converted into a country of women. The damaru and the horn have to be sounded, drums are to be beaten so as to raise the deep and martial notes, and with ' Mahavira , Mahavira ' on your lips and shouting ' Hara, Hara , Vyom, Vyom ' , the quarters are to be reverberated. The music which awakens only the softer feelings of man is to be stopped now for some time. The people are to be accustomed to hear the Dhrupad music.

Through the thunder roll of the dignified Vedic hymns life is to be brought back into the country. In everything the austere spirit of heroic manhood should be revived. If you can build your character after such an ideal than a thousand others will follow. But take care that you do not swerve an inch from the ideal. Never lose heart. In eating dressing or lying, in singing or playing, in enjoyment or disease, always manifest the highest moral courage. Never allow weakness to overtake your mind. Remember Mahavira, remember the divine mother and you will see that all weakness, all cowardice will vanish at once.

The old religion said that he is an atheist who did not believe in God. The new religion says that he is the atheist who does not believe in himself. But it is not selfish faith. It means faith in all because you are all. Love for yourself means love for all, love for animals , love for everything, for you are all one. It is the great faith which will make the world better. The ideal of faith in ourselves is the greatest help to us. If faith in ourselves had been more

extensively taught and practiced, I am sure a very large portion of the evils and miseries that we have would have vanished. Throughout the history of mankind if any motive power has been more potent than another in the lives of great men and women, it is that faith in themselves. Born with the consciousness that they were to be great, they became great.

Infinite strength is religion. Strength is goodness, weakness is sin. **All sins and all evil can be summed up in that one word : weakness.** It is weakness that is the motive power in all evil doing. It is weakness that is the source of all selfishness. It is weakness that makes man injure others . Let them all know what they are, let them repeat day and night what they are ' So'ham' . Let them suck it in with their mothers milk , this idea of strength – I am He ! This is to be first heard; and then let them think of it; and out of that thought will proceed works such as the world have never seen.

Tell the truth boldly. All truth is eternal. Truth is the nature of all souls. And here is the test of truth : anything that makes you weak physically, intellectually and spiritually , reject as poison. There is no life in it. It cannot be true. Truth is strengthening. Truth is purity , truth is all knowledge. Truth must be strengthening, must be enlightening, must be invigorating. Go back to your Upanishads, the shining , the strengthening , the bright philosophy. Take up this philosophy . The greatest truths are the simplest things in the world, simple as your own existence. The truths of the Upanishads are before you. Take them up , live up to them and the salvation of India will be at hand.

Physical weakness is the cause of at least one-third of our miseries. We are lazy, we cannot combine. We speak of many things parrot-like but never do them. Speaking and not doing has become a habit with us. What is the cause ? Physical weakness. This sort of weak brain is not able to do anything. We must strengthen it. First of all our young men and women must be strong. Religion will come afterwards . Be strong , my young friends, that is my advice to you. **You will be nearer to heaven through football then through the study of the Gita.** You will understand the Gita better with your biceps , your muscles, a little stronger. You will understand the mighty genius and the mighty strength of Krishna better with a little strong blood in you. You will understand the Upanishads better and the glory of the Atman when your body stands firm on your feet and you find yourselves as men.

Strength, strength is what the Upanishads speak to me from every page. It is the only literature in the world , where you find the word ' **Abhih** ' , ' fearless ' used again and again. In no other scripture in the world is this adjective applied either to God or to man. And in my mind rises from the past the vision of the great emperor of the west, Alexander the Great , and I see as it were , in a picture the great monarch standing on the banks of the Indus , talking to one of our sannyasins in the forest ; the old man he was talking to , perhaps naked, stark naked, sitting upon a block of stone, and the emperor astonished at his wisdom , tempting him with gold and honour , to come over to Greece. And this man smiles at his gold and smiles at his temptations, and refuses . And then the emperor standing in his authority as Emperor says , ' I will kill you if you do not come ' , and the man bursts into a laugh, and says, ' You never told such a falsehood in your life as you tell just now. Who can kill me ? For I am spirit unborn and undecaying.' That is strength !

There are thousands to weaken us, and of stories we have had enough. Therefore, my friends, as one of your blood, as one that lives and dies with you let me tell you that we want strength, strength, every time strength. And the Upanishads are the great mines of strength. Therein lies strength enough to invigorate the whole world. The whole world can be vivified, made strong, energized through them. They will call with trumpet voice upon the weak, the miserable and the downtrodden of all races, all creeds and all sects to stand on their feet and be free. Freedom, physical freedom , mental freedom and spiritual freedom are the watchwords of the Upanishads.

**But no scriptures can make us religious.** We may study all the books that there are in the world, yet we may not understand a word of religion or of God. We may talk and reason all our lives, but we shall not understand a word of truth until we experience it ourselves. You cannot hope to make a man a surgeon by simply giving him a few books. **You cannot satisfy my curiosity to see a country by showing me a map.** Maps can only create curiosity in us to get more perfect knowledge. Beyond that they have no value whatsoever. **Temples and churches, books and forms are simply the Kindergarten of religion, to make the spiritual child strong enough to take the higher steps.** Religion is not in doctrines and dogmas, nor in intellectual argumentation. It is being and becoming. It is realization.

### **Cultivate The Heart**

We may be the most intellectual people the world ever saw and yet we may not come to God at all. On the other hand , irreligious men have been produced from the most intellectual training. It is one of the evils of western civilization – intellectual education alone without taking care of the heart. It only makes men ten times more selfish. **When there is a conflict between the heart and the brain , let the heart be followed.** It is the heart which takes one to the highest plain, which intellect can never reach. It goes beyond the intellect and reaches what is called inspiration. Always cultivate the heart. Through the heart the Lord speaks.

The intensest love that humanity has ever known has come from religion. The noblest words of peace that the world has ever heard have come from men of the religious plane. At the same time the bitterest denunciation that the world has ever known has been uttered by religious men. Each religion brings out its own doctrines and insists upon them as being the only true ones. Some will even draw the sword to compel others to believe as they do. This is not through wickedness , but through a particular disease of the human mind called fanaticism. Yet out of this strife and struggle, this hatred and jealousy of religions and sects , there have risen from time to time potent voices proclaiming peace and harmony.

### **Sri Ramakrishna , The Messenger Of Harmony**

**The time was ripe for one to be born who would see in every sect the same spirit working : the same God: One who could see God in every being, one whose heart would weep for the poor, for the weak. For the downtrodden, and at the same time whose grand brilliant intellect would harmonize all the conflicting sects not only in India but also outside India, and bring a marvelous harmony, the universal religion , into existence.**

Such a man was born and I had the good fortune to sit at his feet for years . I learned from my master the wonderful truth that the religions of the world are not contradictory or antagonistic . They are but various phases of the one eternal religion. Sri Ramakrishna never spoke a harsh word against anyone. So beautifully tolerant was he that every sect thought that he belonged to it. He loved everyone. To him all religions were true. His whole life was spent in breaking down the barriers of sectarianism and dogma.

**Let the watchword be acceptance and not exclusion.** Not only toleration , for so called toleration is blasphemy. Tolerant means that I think you are wrong and I am just allowing you to live. Is it not blasphemy to think that you and I are allowing others to live ? **I accept all religions that were in the past and worship them all.** I worship God with everyone of them, in whatever form they worship him. I shall go to the mosque of the Mohammedan ; I shall enter the Christian's church and kneel before the crucifix. I shall enter the Buddhist temple where I shall take refuge in Buddha and in his law. I shall go into the forest and sit down in

meditation with the Hindu, who is trying to see the light which enlightens the heart of everyone.

Not only shall I do all these things but I shall keep my heart open for all that may come in the future . **Is God's book finished ?** Or is it still a continuous revelation going on ? It is a marvelous book – these spiritual revelations of the world . The Bible , The Vedas , The Koran and all other sacred books are but so many pages and an infinite number of pages remain to be unfolded. Let us take in all that has been in the past , enjoy the light of the present and open every window of the heart for all that will come in the future . Salutation to all the prophets of the past, to all the great ones of the present and to all that are to come in the future.

## 7. The End And The Means

### The Means Are Important

One of the greatest lessons I have learned in my life is to pay as much attention to the means of work as to its end. He was a great man from whom I learned it, and his own life was a practical demonstration of this great principle. I have been always learning great lessons from that one principle, and it appears to me that all the secret of success is there: to pay as much attention to the means as to the end.

Our great defect in life is that we are so much drawn to the ideal, the goal is so much enchanting, so much more alluring, so much bigger in our mental horizon, that we lose sight of the details altogether.

But whenever failure comes, if we analyze it critically, in ninety-nine percent of cases we shall find that it was because we did not pay attention to the means. Proper attention to the finishing, strengthening, of the means , is what we need. **With the means all right, the end must come.** We forget that it is the cause that produces the effect; the effect cannot come by itself; and unless the causes are exact , proper and powerful , the effect will not be produced. Once the ideal is chosen and the means determined, we may almost let go the ideal, because we are sure it will be there, when the means are perfected.

When the cause is there , there is no more difficulty about the effect, the effect is bound to come. If we take care of the cause , the effect will take care of itself. **The means are the cause : attention to the means, therefore is the great secret of life.** We will read this in the Gita and learn that we have to work , constantly work, with all our power , to put our whole mind in the work, whatever it be, that we are doing. At the same time , we must not be attached. That is to say, we must not be drawn away from the work by anything else, but still we must be able to quit the work whenever we like.

If we examine our lives, we find that the greatest cause of sorrow is this: we take up something, and put our whole energy on it ; - perhaps it is a failure , and yet we cannot give it up. We know that it is hurting us, that any further clinging to it is simply bringing misery on us; still we cannot tear ourselves away from it. **The bee came to sip the honey, but its feet stuck to the honey pot and it could not get away. Again and again we are finding ourselves in that state. That is the whole secret of existence.** Why are we here ? we came to sip the honey, and we find our hands and feet sticking to it. We are caught , though we came to catch. We came to enjoy; we are being enjoyed. We came to rule, we are being ruled. We came to work, we are being worked. All the time we find that. And this comes into every detail of our life. We are always being worked upon by other minds, and we are always struggling to work on other minds. We want to enjoy the pleasures of life ; and they eat into our vitals . We want to get everything from nature, but we find that in the long run that nature takes everything from us – depletes us, and casts us aside.

That is the one cause of misery: we are attached , we are being caught . Therefore says the Gita: work constantly ; but be not attached ; be not caught . Reserve unto yourself the power of detaching yourself from everything , however beloved , however much the soul might yearn for it, however great the pangs of misery you feel if you are going to leave it ; still , reserve the power of leaving it whenever you want. **The weak have no place here, in this life or in any other life. Weakness leads to slavery. Weakness leads to all kinds of misery , physical and mental . Weakness is death.** There are hundreds of thousands of microbes surrounding us, but they cannot harm us unless we become weak, until the body is ready and pre-disposed to receive them. There may be a million microbes of misery , floating about us. Never mind ! They dare not approach us, they have no power to get hold of us,

until the mind is weakened. This is the great fact: strength is life, weakness is death. Strength is felicity, life eternal, immortal, weakness is constant strain and misery; weakness is death.

Attachment is the source of all our pleasures now. We are attached to our friends , to our relatives; we are attached to our intellectual and spiritual works; we are attached to external objects, so that we get pleasure from them. What again brings misery but this very attachment ? We have to detach ourselves to earn joy. If only we had the power to detach ourselves at will, there would not be any misery. That man alone will be able to get the best of nature, who having the power of attaching himself to a thing with all his energy, has also the power to detach himself when he should do so. The difficulty is that there must be as much power of attachment as that of detachment.

There are men who are never attracted by anything. They can never love, they are hard - hearted and apathetic; they escape most of the miseries of life. But the wall never feels misery, the wall never loves, is never hurt; but it is a wall after all. Surely it is better to be attracted and caught, than to be a wall. Therefore the man who never loves, who is hard and stony, escaping most of the miseries of life, escapes also its joys. We do not want that. That is weakness , that is death. That soul has not been weakened that never feels weakness, never feels the misery. That is the callous state. We do not want that.

At the same time, we not only want this mighty power of love, this mighty power of attachment , the power of throwing our whole soul upon a single object, losing ourselves and letting ourselves be annihilated as it were, for other souls – which is the power of the gods – **but we want to be higher than even gods**. The perfect man can put his whole soul upon that one point of love, yet he is un-attached. How comes this ? There is another secret to learn.

The beggar is never happy. The beggar only gets dole, with pity and scorn behind it, at least with the underlying thought that the beggar is a low object. He never enjoys what he gets.

**We are all beggars, whatever we do, we want a return**. We are all traders. We are traders in life, we are traders in virtue, we are traders in religion. Alas ! we are also traders in love.

If you come to trade, if it is a question of give-and-take, if it is a question of buy and sell, abide by the laws of buying and selling. There is a bad time and there is a good time; there is a rise, and a fall in prices: always you expect the blow to come. It is like looking at the mirror. Your face is reflected; you make a grimace – there is one in the mirror; if you laugh, the mirror laughs. This is buying and selling, giving and taking.

**We get caught. How ? Not by what we give but by what we expect**. We get misery in return for our love; not from the fact that we love, but from the fact that we want love in return. **There is no misery where there is no want**. Desire, want, is the father of all misery . Desires are bound by the laws of success and failure. Desires must bring misery.

**The great secret of true success, of true happiness, then, is this : the man who asks for no return, the perfectly unselfish man is the most successful**. It seems to be a paradox. Do we not know that every man who is unselfish in life gets cheated, gets hurt ? Apparently, yes. “ Christ was unselfish and yet he was crucified. “ True, but we know that his unselfishness is the reason, the cause of a great victory, the crowning of millions upon millions of lives with the blessings of true success.

**Ask nothing; want nothing in return**. Give what you have to give; it will come back to you – but do not think of that now. It will come back multiplied a thousand fold – but the attention must not be on that. Yet have the power to give; give, and there it ends. Learn that the

whole of life is giving, that nature will force you to give. So give willingly. Sooner or later you will have to give up. You come into life to accumulate. With clenched hands, you want to take. But nature puts a hand on your throat and makes your hands open. Whether you will it or not, you have to give. The moment you say , “ I will not”, the blow comes ; you are hurt. None is there but will be compelled, in the long run to give up everything. The more one struggles against this law, the more miserable one feels. It is because we dare not give, because we are not resigned enough to accede to this grand demand of nature, that we are miserable. The forest is gone but we get heat in return. The sun is taking up water from the ocean , to return it in showers. You are a machine for taking and giving; you take in order to give. Ask therefore for nothing in return ; but the more you give , the more will come to you. The quicker you can empty the air out of this room , the quicker it will be filled up by the external air; and if you close all the doors and every aperture, that which is within will remain, but that which is outside will never come in, and that which is within will stagnate , degenerate , and become poisoned. A river is continually emptying itself into the ocean and is continually filling up again. Bar not the exit into the ocean. The moment you do that, death seizes you.

Be, therefore, not a beggar; be unattached. This is the most terrible task of life! you do not calculate the dangers on this path. Even by intellectually recognizing the difficulties, we really do not know them until we feel them. From a distance we may get a general view of a park: well, what of that ? We feel and really know it when we are in it. Even if our every attempt is a failure, and we bleed and are torn asunder , yet , through all this, we have to preserve our heart – we must assert our Godhead in the midst of all these difficulties. Nature wants us to react, to return blow for blow, cheating for cheating, lie for lie, to hit back with all our might. Then it requires a super divine power not to hit back, to keep control, to be unattached.

I know the difficulties. Tremendous they are, and ninety percent of us become discouraged and lose heart, and in our turn, often become pessimists and cease to believe in sincerity, love and all that is grand and noble. So we find men, who are in the freshness of their lives, have been forgiving, kind, simple, and guileless, become in old age, lying masks of men. Their minds are a mass of intricacy. There may be a good deal of external policy, possibly. They are not hot headed, they do not speak; but it would be better for them to do so; their hearts are dead, and, therefore they do not speak. They do not curse, nor become angry, a thousands times better to be able to curse. They cannot. There is death in the heart, for cold hands have seized upon it, and it can no more act, even to utter a curse, even to use a harsh word.

All this we have to avoid : therefore I say, we require super-divine power. Superhuman power is not strong enough. Super divine strength is the only way, the one way out. By it alone we can pass through all these intricacies, through these showers of miseries, unscathed. We may be cut to pieces, torn asunder, yet our heart must grow nobler and nobler all the time.

It is very difficult, but we can overcome the difficulty by constant practice. **We must learn that nothing can happen to us, unless we make ourselves susceptible to it.** I have just said that no disease can come to me until the body is ready; it does not depend alone on the germs, but upon a certain pre-disposition which is already in the body. **We get only that for which we are fitted. Let us give up our pride and understand this , that never is misery undeserved. There never has been a blow undeserved ; there never has been an evil for which I did not pave the way with my own hands.** We ought to know that. Analyze yourselves and you will find that every blow you have received came to you because you prepared yourselves for it. You did half and the external world did the other half; that is how the blow came. That will sober us down. At the same time from this very analysis will come a note of hope, the note of hope is : “ I have no control of the external world, but that which is in me and nearer unto

me, my own world is in my control . If the two together are required to make a failure , if the two together are necessary to give me a blow, I will not contribute the one which is in my keeping, and how then can the blow come ? If I get real control of myself, the blow will never come."

We are all the time, from our childhood, trying to lay the blame upon something outside ourselves. We are always standing up to set right other people, and not ourselves. If we are miserable, we say, " Oh, the world is a devil's world." But why should we be in such a world, if we really are so good ? If this is a devils world , we must be devils also, why else should we be here ? " Oh , the people of the world are so selfish !" True enough; but why should we be found in that company, if we be better ? Just think of that !

### **We Get What We Deserve**

We only get what we deserve. It is a lie when we say, the world is bad and we are good. It can never be so. It is a terrible lie we tell ourselves. This is the first lesson to learn: be determined not to curse anything outside , not to lay the blame upon anyone else outside. But be a man , stand up , lay the blame on yourself. You will find that is always true. Get hold of yourself.

We are to take care of ourselves – that much we can do – and give up attending to others , for a time. Let us perfect the means; the end will take care of itself. For the world can be good and pure, only if our lives are good and pure . It is an effect and we are the means. Therefore let us purify ourselves. Let us make ourselves perfect.

## 8. Education and Women

### In Ancient India

It is very difficult to understand why in this country so much difference is made between men and women, whereas the Vedanta declares that the one and the same self is present in all beings. Writing down Smriti's etc., and binding them by hard rules, the men have turned the women into mere manufacturing machines. In the period of degradation, when the priests made the other castes incompetent to study the Vedas, they deprived the women also of all their rights. You will find in the Vedic and Upanishadic age, Maitreyi, Gargi and other ladies of revered memory have taken the place of Rishis. In an assembly of a thousand Brahmanas who were all erudite in the Vedas, Gargi boldly challenged Yajnavalkya in a discussion about Brahman.

All nations have attained greatness by paying proper respect to women. That country and that nation which do not respect women have never become great, nor will ever be in future. The real Shakti-worshipper is he who knows that God is the Omnipresent force in the universe, and sees in women the manifestation of that force. In America men look upon their women in this light and treat their women as well as can be desired, and hence they are so prosperous, so learned, so free and so energetic. The principal reason why our race has so degenerated is that we have no respect for these living images of Shakti. Manu says, "Where women are respected, there the god's delight, and where they are not, there all effort and work come to naught.' There is no hope for rise for that family or country where they live in sadness."

Women have many and grave problems, but none that cannot be solved by that magic word: education. What does Manu enjoin? ' Daughters should be supported and educated with as much care and attention as the sons. ' Women must be put in a position to solve their own problems in their own way. Our Indian women are capable of doing it as any in the world.

Female education should be spread with religion as its centre. All other training should be secondary to religion. Religious training, the formation of character and the observance of vows of celibacy – these should be attended to. Our Hindu women easily understand what chastity means, because it is in their heritage. First of all intensify that ideal within them above everything else, so that they will develop a strong character by force of which, in every stage of their lives, whether married or single – if they prefer to remain so – they will not be in the least afraid even to give up their lives rather than flinch an inch from their chastity.

The women of India must grow and develop in the footprints of Sita. Sita is unique. She is the very type of true Indian woman, for all the Indian ideals of a perfected woman has grown out of that one life of Sita. And here she stands these thousands of years, commanding the worship of every man, woman and child throughout the length and breadth of Aryavarta. There she will always be, this glorious Sita, purer than purity itself, all patience and all suffering. She who suffered that life of suffering, without a murmur, she the ever chaste and ever pure wife, she the ideal of the people, our national God she must always remain. She has gone into the very vitals of our race. Any attempt to modernize our women, if it tries to take our women away from the ideal of Sita, is immediately a failure as we see every day.

Studying the present needs of the age, it seems imperative to train some of them in the ideals of renunciation, so that they will take up the vow of life-long virginity, fired with the

strength of that virtue of chastity which is innate in their blood from hoary antiquity. Our motherland requires for her well-being some of her children to become pure souled Brahmacharins and Brahmacharinis. Even if one amongst the women become a knower of Brahman , then by the radiance of her personality, thousands of women would be inspired and awakened to truth and great well-being of the country and society would ensue.

Brahmcharinis of education and character should take up the task of teaching. In villages and towns they must open centres and strive for the spread of female education. Through such devout preachers of character, there will be the real spread of female education in the country. History and puranas , house – keeping and the arts, the duties of home life and the principles that make for the development of character have to be taught. Other matters such as sewing, culinary art, rules of domestic work and upbringing of children will also be taught. Japa, worship and meditation shall form an indispensable part of the teaching. Along with other things they should acquire the spirit of valour and heroism. In the present day it has become necessary for them to also learn self defence – how grand was the queen of Jhansi ! So shall we bring to the need of India great fearless women – women worthy to continue the traditions of Sanghamittra, Lila, Ahalya Bai and Mira Bai – Women fit to be mothers of heros, because they are strong and fearless, strong with the strength that comes of touching the feet of God. We must see to their growing up as ideal matrons of home in time. The children of such mothers will make further progress in the virtues that distinguish themselves. **It is only in the homes of educated and pious mothers that great men are born.**

If the women are raised, their children will by their noble actions glorify the name of the country; then will culture, knowledge, power and devotion awaken in the country.

## 9. Education Of The Masses

### The Great National Sin

My heart aches to think of the condition of the poor , the low in India. They sink lower and lower every day. They feel the blow showered upon them by a cruel society , but they do not know whence the blow comes. They have forgotten that they too are men. My heart is too full to express my feelings. **So long as millions live in hunger and ignorance , I hold every man a traitor who, having been educated at their expense , pays not the least heed to them.** Our great national sin is the neglect of the masses and that is the cause of our downfall. No amount of politics would be of any avail until the masses in India are once more well educated, well fed and well cared for.

A nation is advanced in proportion as education and intelligence spread among the masses. The chief cause of India's ruin has been the monopolizing of the whole education and intelligence of the land among a handful of men. If we are to rise again, we shall have to do it by spreading education amongst the masses. The only service to be done for our lower classes is to give them education to develop their individuality. They are to be given ideas. Their eyes are to be opened to what is going on in the world around them, and then they will work out their own salvation. Every nation , every man and every woman must work out their own salvation. Give them ideas – that is the only help they require and then the rest must follow as effect. Ours is to put the chemicals together , the crystallization comes in the law of nature.

My idea is first of all to bring out the gems of spirituality that is stored up in our books and in the possession of a few only , hidden as it were in monasteries and forests - to bring them out; to bring the knowledge out of them, not only from the hands where it is hidden , but from the still more inaccessible chest , the language in which it is preserved , the incrustation of centuries of Sanskrit words. In one word , I want to make it popular. I want to bring out these ideas and let them be the common property of all, of every man and woman in India , whether they know the Sanskrit language or not. The great difficulty in the way is the Sanskrit language , this glorious language of ours, and this difficulty cannot be removed until , if it is possible , the whole of our nation are good Sanskrit scholars. You will understand the difficulty when I tell you that I have been studying this language all my life and yet every new book is new to me. How much more difficult would it be for people who never had time to study it thoroughly ! Therefore the ideas must be taught in the language of the people. Teach the masses in the vernaculars. Give them ideas; they will get the information , but some more will is necessary. Give them culture. Until you can give them that , there can be no permanence in the raised condition of the masses.

At the same time Sanskrit education must go along with it, because the very sound of Sanskrit words gives a prestige, a power and a strength to the race. Even the great Buddha made one false step when he stopped the Sanskrit language from being studied by the masses. He wanted rapid and immediate results; and translated and preached in the language of the day – Pali. That was grand; he spoke the language of the people and the people understood him. It spread the ideas quickly and made them reach far and wide. But along with that Sanskrit ought to have been spread. Knowledge came but prestige was not there. Until you give them that, there will be another caste created, having the advantage of the Sanskrit language, which will quickly get above the rest.

Remember that the nation lives in the cottage. Your duty at present is to go from one part of the country to another , from village to village , and make the people understand that mere sitting about idly won't do any more. Make them understand their real condition and say, ' O ye brothers , all arise ! awake ! How much longer would you remain asleep ! ' Go and advise

them how to improve their own condition and make them comprehend the sublime truths of the shastras, by presenting them in a lucid and popular way. Impress upon their minds that they have the same right to religion as the brahmanas. Initiate, even down to the Chandalas, in these fiery mantras. Also instruct them in simple words about the necessities of life, and in trade, commerce, agriculture, etc.

Centuries and centuries, a thousand years of crushing tyranny of castes , kings and foreigners have taken out all their strength. And the first step in getting strength is to uphold the Upanishads and believe ' I am the soul ' , me the sword cannot cut ; nor the weapons pierce; me the fire cannot burn; me the air cannot dry ; I am the Omnipotent. I am the Omniscient. These conceptions of the Vedanta must come out of the forest and the cave , they must come out to work at the bar and then bench, in the pulpit and in the cottage of the poor man, with the fishermen that are catching fish and the students that are studying. They call to every man , woman and child, whatever their occupation, wherever they may be. How can the fishermen and all these carry out the ideas of the Upanishads ? The way has been shown. If the fisherman thinks that he is the spirit, he will be a better fisherman; if the student thinks he is the spirit, he will be a better student.

The one thing that is at the root of all evils in India is the condition of the poor. Suppose you open a free school in every village, still it would do no good, for the poverty in India is such that the poor children would rather go to help their parents in the fields or otherwise try to make a living than come to the school. Now if the Mountain does not come to Mohammed, Mohammed must go to the Mountain. If the poor child cannot come to education, education must go to him/her. There are thousands of single minded, self sacrificing sannyasins in our own country, going from village to village, teaching religion. If some of them can be organised as teachers for secular things also, they will go from place to place , from door to door, not only preaching but teaching also. Suppose two of these men go to a village in the evening with a camera , a globe , some maps etc., they can teach a great deal of astronomy and geography to the ignorant. By telling stories about different nations , they can give the poor a hundred times more information through the ear than they can get in a lifetime through books. Kindle their knowledge with the help of modern science. Teach them history , geography, science, literature and along with these the profound truths of religion through these.

Engrossed in the struggle for existence, they had not the opportunity for the awakening of knowledge. They have worked so long like machines and the clever educated section have taken the substantial part of the fruits of their labour. But times have changed. The lower classes are gradually awakening to this fact, and making a united front against this. The upper classes will no longer be able to repress the lower, try they ever so much. The well being of the higher classes now lies in helping the lower to get their legitimate rights. Therefore I say : set yourself the task of spreading education among the masses. Tell them and make them understand, ' You are our brothers , a part and parcel of our bodies. ' if they receive this sympathy from you, their enthusiasm for work will be increased hundredfold.

Three things are necessary for great achievements. First, feel from the heart. What is in the intellect or reason ? It goes a few steps and then it stops. But through the heart comes inspiration. Love opens the most impossible gates. Feel therefore my would be patriots. Do you feel ? Do you feel that millions and millions of the descendants of gods and of sages have become next door neighbours of brutes ? Do you feel that millions are starving today, and millions have been starving for ages ? Do you feel that ignorance has come over the land as a dark cloud ? Does it make you restless ? Has it gone into your blood, coursing through your veins, becoming consonant with your heart beats ? Has it made you almost mad ? Are you seized with the one idea of the misery of ruin, and have you forgotten all about your name , your fame , your wives , your children, your property, even your own bodies ? Have you done that ? That is the first step.

You may feel then; but instead of spending your energies in frothy talk, have you found any way out, any practical solution , to soothe their miseries, to bring them out of this living death. Yet that is not all. Have you got the will to surmount mountain high obstructions ? If the whole world stands against you , sword in hand, would you still dare to do what is right ? If your wives and children are against you , if all your name dies, your wealth vanishes, would you still stick to it ? Would you still pursue it and go on steadily towards your own goal ? As the great King Bhartrihari says , ‘ let the sages blame or let them praise; let the Goddess of fortune come or let her go wherever she likes; let death come today or let it come in hundreds of years; he indeed is the steady man who does not move one inch from the way of truth.’ Have you got that steadfastness ? If you have these three things, each one of you will work miracles.

Let us pray, ‘ lead, kindly light ‘; a beam will come through the dark, and a hand will be stretched forth to lead us. Let each one of us pray day and night for the downtrodden millions of India, who are held fast by poverty , priestcraft and tyranny ; pray day and night for them. I care more to preach to them than to the high and the rich. I am no metaphysician, no philosopher , nay, no saint. But I am poor. I love the poor. Who feels for the two hundred millions of men and women sunken for ever in poverty and ignorance ? Him I call a Mahatma who feels for the poor. Who feels for them ? They cannot find light or education. Who will bring the light to them – who will travel from door to door bringing education to them ? Let these people be your God – think of them , work for them, pray for them incessantly – The Lord will show you the way.

## 10. What Is Duty ?

It is necessary in the study of Karma Yoga to know what duty is. If I have to do something I must first know that it is my duty, and then I can do it. The idea of duty is different in different nations.

The Mohammedan says what is written in his book the Koran , is his duty; the Hindu says what is in the Vedas is his duty; and the Christian says what is in the Bible is his duty. We find that there are varied ideas of duty , differing according to different states in life , different historical periods and different nations. The term “ duty “ , like every other universal abstract term , is impossible to define clearly; we can only get an idea of it by knowing its practical operations and results. When certain things occur before us we all have a natural or trained impulse to act in a certain manner towards them; When this impulse comes , the mind begins to think about the situation . Sometimes it thinks that it is good to act in a particular manner under the given conditions , at other times it thinks that it is wrong to act in the same manner even in the very same circumstances. The ordinary idea of duty everywhere is that every good man follows the dictates of his conscience.

But what is it that makes an act a duty ? If a Christian finds a piece of beef before him and does not eat it to save his own life , or will not give it to save the life of another man , he is sure to feel that he has not done his duty. But if a Hindu dares to eat that piece of beef or to give it to another Hindu, he is equally sure to feel that he too has not done his duty; the Hindu's training and education make him feel that way. Ordinarily if a man goes out into the street and shoots down another man, he is apt to feel sorry for it, thinking that he too has done wrong. But if the very same man, as a soldier in his regiment , kills not one but twenty , he is certain to feel glad and think that he has done his duty remarkably well. Therefore we see that it is not the thing done that defines a duty.

To give an objective definition of duty is thus entirely impossible. Yet there is duty from the subjective side. Any action that makes us go godward is a good action, and is our duty; any action that makes us go downward is evil , and is not our duty. From the subjective standpoint we may see that certain acts have a tendency to exalt and ennoble us, while certain other acts have a tendency to degrade and brutalize us. But it is not possible to make out with certainty which acts have which kind of tendency in relation to all persons of all sorts and conditions. There is however only one idea of duty which has been universally accepted by mankind, of all ages and sects and countries; and that has been summed up in a Sanskrit aphorism thus :- Do not injure any being; not injuring any being is virtue , injuring any being is sin.

The Bhagwat Gita frequently alludes to duties dependent on birth and position in life. Birth and position in life and in society largely determine the mental and moral attitude to life. It is therefore our duty to do that work which will exalt and ennoble us in accordance with the ideals and activities of the society in which we were born. But it must be particularly remembered that the same ideals and activities do not prevail in all societies and countries; our ignorance of this is the main cause of much of the hatred of one nation towards another. An American thinks that whatever an American does in accordance with the custom of his country is the best thing to do, and that whoever does not follow his custom must be a very wicked man. . The Hindu thinks that his customs are the only right ones and are the best in the world , and that whosoever does not obey them must be the most wicked man living. This is quite a natural mistake which all of us are apt to make. But it is very harmful ; it is the cause of half the un-charitableness found in the world.

Therefore the one point we ought to remember is that we should always try to see the duty of others through their own eyes, and never try to judge the customs of other people by our own standards. I am not the standard of the universe. I have to accommodate myself to the world , and not the world to me. So we see that environments change the nature of our duties, and doing the duty which is ours at any particular time is the best thing we can do in this world. Let us do that duty which is ours by birth ; and when we have done that , let us do the duty which is ours by our position in life and in society.

There is however one great danger in human nature , viz., that man never examines himself. He thinks he is quite as fit to be on the throne as the king. Even if he is, he must first show that he has done the duty of his own position ; and then higher duties will come to him. When we begin to work earnestly in the world, nature gives us blows right and left and soon enables us to find our own position. No man can occupy satisfactorily a position for which he is not fit. There is no use in grumbling against nature's adjustment. He who does the lower work is not therefore a lower man. No man is to be judged by the mere nature of his duties, but all should be judged by the manner and the spirit in which they perform them.

Later on we shall find that even this idea of duty undergoes change, and that the greatest work is done only when there is no selfish motive to prompt it. Yet it is work through the sense of duty that leads us to work without any idea of duty; when work will become worship – nay , something higher – then will work be done for its own sake. We shall find that the philosophy of duty whether it be in the form of ethics or of love, is the same as in every other Yoga – the object being the attenuation of the lower self , so that the higher self may shine forth; to lessen the frittering away of energies on the lower plane of existence, so that the soul may manifest itself on the higher ones. This is accomplished by the continuous denial of lower desires, which duty rigorously requires. The whole organization of society has thus been developed consciously or unconsciously in the realms of action and experience, where by limiting selfishness, we open the way to an unlimited expansion of the real nature of man.

Duty is seldom sweet . It is only when love greases its wheels that it runs smoothly; it is a continuous friction otherwise. How else could parents do their duty to their children, husbands to their wives and vice versa ? Do we not meet with cases of friction everyday in our lives ? Duty is sweet only through love, and love shines in freedom alone. Yet it is freedom to be a slave to the senses, to anger , to jealousies and a hundred other petty things that must occur every day in human life.

In all these little roughnesses that we meet with in life , the highest expression of freedom is to forebear. Women , slaves to their own irritable , jealous tempers, are apt to blame their husbands , and assert their own “ freedom, “ as they think , not knowing that thereby they only prove that they are slaves. So is it with husbands who eternally find fault with their wives.

The only way to rise is by doing the duty next to us, and gathering strength to go on until we reach the highest state. A young sannyasin went to a forest; there he meditated, worshipped and practiced Yoga for a long time. After years of hard work and practice, he was one day sitting under a tree, when some dry leaves fell upon his head. He looked up and saw a crow and a crane fighting on the top of the tree, which made him very angry. He said “ What ! how dare you throw these dry leaves upon my head !” As with these words he angrily glanced at them a flash of fire went out of his head – such was the Yogin's power – and burnt the birds to ashes. He was very glad , almost overjoyed , at this development of power – he could burn the crow and the crane by a look. After a time he had to go to the town to beg his bread. He went and stood at the door and said “ Mother , give me food .” A voice came from inside the house , “ wait a little, my son.” The young man thought , “ You wretched woman, how dare you make me wait ! You do not know my power yet. “ When he was thinking thus

the voice came again: “ Boy, don’t be thinking too much about yourself. Here is neither crow nor crane.” He was astonished ; still he had to wait. At last the woman came and he fell at her feet and said “ Mother, how do you know that ?” She said “ My boy, I do not know your yoga or your practices. I am a common everyday woman. I made you wait as my husband is ill, and I was nursing him. All my life I have struggled to do my duty. When I was unmarried , I did my duty to my parents ; now that I am married , I do my duty to my husband ; that is all the yoga I practice. But by doing my duty I have become illuminated; thus I could read your thoughts and I know what you have done in the forest ... ”

It is the worker who is attached to results that grumbles about the nature of duty which has fallen to his lot; to the unattached worker all duties are equally good, and form efficient instruments with which selfishness and sensuality may be killed, and the freedom of the soul secured. We are all apt to think too highly of ourselves . Our duties are determined by our desires to a much larger extent than we are willing to grant. Competition arouses envy, and it kills the kindliness of the heart / To the grumbler all duties are distasteful ; nothing will ever satisfy him, and his whole life is doomed to prove a failure.

Let us work on , doing as we go whatever happens to be our duty , and being ever ready to put our shoulders to the wheel. Then surely we will see the light!”

## 11. Work Like A Master

We read in the Bhagwad – Gita again and again that we must all work incessantly. All work is by it's nature composed by good and evil. We cannot do any work which will not do some good somewhere ; there cannot be any work which will not do some harm somewhere. Every work must necessarily be a mixture of good and evil; yet we are commanded to work incessantly. Good and evil will both have their result , will produce their karma. Good action will entail upon us good effect; bad action, bad. But good and bad are both bondages of the soul. The solution reached in the Gita in regard to this bondage-producing nature of work is that , if we do not attach ourselves to the work that we do , it will not have any binding effect on our soul. We shall try to understand what is meant by this “ non-attachment ” to work.

As a tortoise tucks its feet and head inside the shell , and you may kill it and break it in pieces , and yet it will not come out , even so the character of that man who has control over his motives and organs is unchangeably established. He controls his own inner forces , and nothing can draw them out against his will. By this continuous reflection of good thoughts , good impressions moving over the surface of the mind, the tendency of doing good becomes strong and as a result we feel able to control the indriyas ( the sense organs , the nerve centers ) . Thus alone will character be established , then alone a man gets to truth. Such a man is safe for ever ; he cannot do any evil. You may place him in any company, there will be no danger for him . There is a still higher state than having this good tendency, and that is the desire for liberation. You must remember that freedom of the soul is the goal of all the yogas , and each one equally leads to the same result.

**By work alone men may get to where Buddha got largely by meditation or Christ by prayer . Buddha was a working jnani , Christ was a bhakta , but the same goal was reached by both of them.** The bad tendencies are to be counteracted by the good ones, and the bad impressions on the mind should be removed by the fresh waves of good ones , until all that is evil almost disappears ( The best way to do this is to constantly remember the life of a saint , depending on your faith and by keeping him as company in your mind you will eventually become like him ) , or is subdued and held in control in a corner of the mind; but after that , the good tendencies have also to be conquered . Thus the “ attached ” becomes the “ un-attached “ . Work , but let not the action or the thought produce a deep impression on the mind. Let the ripples come and go, let huge actions proceed from the muscles and the brain, but let them not make any deep impression on the soul.

How can this be done ? We see that the impression of any action to which we attach ourselves , remains. I may see hundreds of persons during the day , and among them meet also one whom I love; and when I retire at night I may try to think of all the faces I saw , but only that face comes before the mind – the face which I met perhaps for only a minute, and which I loved; All the others have vanished . My attachment to this particular person caused a deeper impression on my mind than all the other faces. Physiologically , the impressions have all been the same; every one of the faces that I saw pictured itself on the retina, and the brain took the pictures in , and yet there was no similarity of effect upon the mind. Most of the faces perhaps, were entirely new faces , about which I had never thought before , but that one face of which I got only a glimpse found associations inside. Perhaps I had pictured him in my mind for years , knew hundreds of things about him and this one new vision of him awakened hundreds of sleeping ,memories in my mind and this one impression having been repeated perhaps a hundred times more than those of the different faces together , will produce a great effect on the mind.

**The whole gist of this teaching is that you should work like a master and not as a slave; work incessantly , but do not do slave's work.** Do you not see how everybody works ? Nobody can be altogether at rest ; ninety nine percent of mankind work like slaves, and the

result is misery; it is all selfish work. **Work through freedom ! work through love !** The word love is very difficult to understand; **love never comes until there is freedom. There is no true love possible in the slave.** If you buy a slave and tie him down in chains and make him work for you , he will work like a drudge, but there will be no love in him. So when we ourselves work for the things of the world as slaves , there can be no love in us , and our work is not true work . This is true of work done for relatives and friends , and is true of work done for our own selves. **Selfish work is slave's work ;** and there is a test.

Every act of love brings happiness, there is no act of love which does not bring peace and blessedness as its reaction. Real existence, real knowledge and real love are eternally connected with one another , the three in one ; where one of them is , the other also must be; they are the three aspects of the one without the second – the Existence–knowledge – Bliss . When that existence becomes relative , we see it as the world; that knowledge becomes in its turn modified into the knowledge of the things of the world ; and that bliss forms the foundation of all true love known in the heart of man. Therefore true love can never react so as to cause pain either to the lover or to the beloved. Suppose a man loves a woman; he wishes to have her all to himself and feels extremely jealous about her every movement; he wants her to sit next to him , to stand near him , and to eat and move at his bidding. He is a slave to her and wishes to have her as his slave. That is not love; it is a kind of morbid affection of the slave, insinuating itself as love. It cannot be love , because it is painful . If she does not do as he wants, it brings him pain . **With love there is no painful reaction; love only brings a reaction of bliss; if it does not , it is not love.** When you have succeeded in loving your husband , your wife , your children , the whole world , the universe in such a manner that there is no reaction of pain or jealousy , no selfish feeling , then you are in a fit state to be unattached.

### **Do Not Expect**

Do you ask anything of your children in return for what you have given them ? It is your duty to work for them . and there the matter ends.

In whatever you do for a particular person , a city , a state , assume the same attitude towards it as you have to your children – expect nothing in return. If you can invariably take the position of a giver , in which everything given by you is a free offering to the world, without any thought of return , then will your work bring you no attachment. Attachment comes only where we expect a return.

If working like slaves results in selfishness and attachment , working as masters of your own mind gives rise to the bliss of non-attachment. We often talk of right and justice, but we find that in the world right and justice are mere baby's talk. There are two things which guide the conduct of men : might and mercy. **The exercise of might is invariably the exercise of selfishness.** All men and women try to make the most of whatever power or advantage they have. Mercy is heaven itself ; to be good, we all have to be merciful, even justice and right should stand on mercy. All thought of obtaining return for the work we do hinders our spiritual progress; nay , in the end it brings misery.

There is another way in which this idea of mercy and selfless charity can be put into practice ; that is , **by looking upon work as “ worship ”** in case we believe in a personal God. Here we give up all the fruits of our work unto the Lord, and, worshipping Him thus, we have no right to expect anything from mankind for the work we do. The Lord himself works incessantly and is ever without attachment. **Just as water cannot wet a lotus leaf, so work cannot bind the unselfish man by giving rise to attachment to results.** The selfless and unattached man may live in the very heart of a crowded and sinful city; he will not be touched by sin.

## The Story Of The Mongoose

This idea of complete self-sacrifice is illustrated in the following story :-

After the battle of Kurukshetra the five Pandava brothers performed a great sacrifice and made very large gifts to the poor. All people expressed amazement at the greatness and the richness of the sacrifice, and said that such a sacrifice the world had never seen before.

But after the ceremony there came a little mongoose , half of whose body was golden, and the other half brown, and he began to roll on the floor of the sacrificial hall. He said to those around, “ **You are all liars; this is no sacrifice .**” “ What ! “ they exclaimed, “ You say this is no sacrifice ; do you know how much money and jewels were poured out to the poor and everyone became rich and happy ? This was the most wonderful sacrifice any man ever performed .”

But the mongoose said “ There was once a little village, and in it there dwelt a poor brahmin , with his wife and his son and his son’s wife . They were very poor and lived on the small gifts made to them for preaching and teaching. There came in that land a three years’ famine, and the poor brahmin suffered more than ever. At last when the family had starved for days, the father brought home one morning a little barley flour, which he had been fortunate enough to obtain, and he divided it into four parts, one for each member of the family. They prepared it for their meal , and just as they were about to eat there was a knock on the door. The father opened it and there stood a guest. Now in India a guest is a sacred person ; he is as a god for the time being, and must be treated as such. So the poor brahmin said. ‘ come in, sir, you are welcome .’ He set before the guest his own portion of the food , which the guest quickly ate and said , ‘ Oh, sir, you have killed me; I have been starving for ten days , and this little bit has increased my hunger .’ Then the wife said to her husband ‘ Give him my share ,’ but the husband said ‘ Not so. ‘ The wife however insisted , saying, ‘ Here is a poor man, and it is our duty as house holders to see that he is fed, and it is my duty as a wife to give him my portion , seeing that you have no more to offer him.’ Then she gave her share to the guest , which he ate , and said he was still burning with hunger. So the son said . ‘ take my portion also ; it is the duty of the son to help his father to fulfil his obligations.’ The guest ate that , but remained still unsatisfied; so the son’s wife gave him her portion also. That was sufficient, and the guest departed blessing them.

That night those four people died of starvation. A few granules of the flour had fallen on the floor , and when I rolled my body on them, half of it had become golden, as you see. Since then I have been traveling all over the world, hoping to find another sacrifice like that, but nowhere else has the other half of my body been turned into gold. That is why I say that this is no sacrifice. ”

**This idea of charity is going out of India; great men are becoming fewer and fewer.**

Now you see what karma yoga means; even at the point of death to help anyone without asking questions. Be cheated millions of times and never ask a question, and never think of what you are doing. Never vaunt your gifts at the poor or expect their gratitude, but rather be grateful to them for giving you the occasion of practicing charity to them.

**- Concluded -**

An Education Philosophy For India – By Swami Vivekananda

**Adopted as the Design Basis Document For “ The Indian Primary & Secondary Education Mega Project ” in April ‘ 2009.**



**B. Organization : Food Corporation Of India**

Surplus Land = 50 Acres

Value Per Acre = 450 Crores ( Based on Latest Deals in Mumbai )

Practical Value Taken For Calculation = Rs 200 Crores / Acre

Total Realizable Value For Education Megaproject = **Rs 3500 Crores**

( After Giving FCI It's Share And after Accounting for Higher FSI's )

Source Link : <http://www.business-standard.com/india/news/fci-may-rent-out-property-to-unlock-realty-value/314421/>

**C. Organization : Rashtriya Chemicals & Fertilizers**

Surplus Land = 100 Acres

Value Per Acre = 450 Crores ( Based on Latest Deals in Mumbai )

Practical Value Taken For Calculation = Rs 200 Crores / Acre

Total Realizable Value For Education Megaproject = **Rs 7000 Crores**

( After Giving RCF It's Share And after Accounting for Higher FSI's )

Source Link : <http://economictimes.indiatimes.com/markets/real-estate/news-/RCF-smells-a-goldmine-plans-to-sell-Mumbai-land/articleshow/2632496.cms>

**D. Organization : Indian Railways**

Surplus Land = 113000 Acres

Surplus Land in Major Cities ( Assumed @ 0.5 % ) = 565 Acres

Value Per Acre = 200 Crores ( Based on Latest Deals in Mumbai / Delhi )

Practical Value Taken For Calculation = Rs 200 Crores / Acre

Total Realizable Value For Education Megaproject = **Rs 39,550 Crores**

( After Giving RCF It's Share and after Accounting for Higher FSI's )

Source Links :

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<http://www.rlda.in/presentation/Final%20site%20presentation%20Developers%20Conference%201.ppt#265>

**E. Organization : Department Of Telecom ( DOT )**

Surplus Land = 770 Acres

Value Per Acre = 200 Crores ( Based on Latest Deals in Mumbai )

Practical Value Taken For Calculation = Rs 200 Crores / Acre

Total Realizable Value For Education Megaproject = **Rs 53,900 Crores**

( After Giving DOT It's Share and after Accounting for Higher FSI's )

Source Links :

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## Annexure 7.0 VERNACULAR ARCHITECTURE

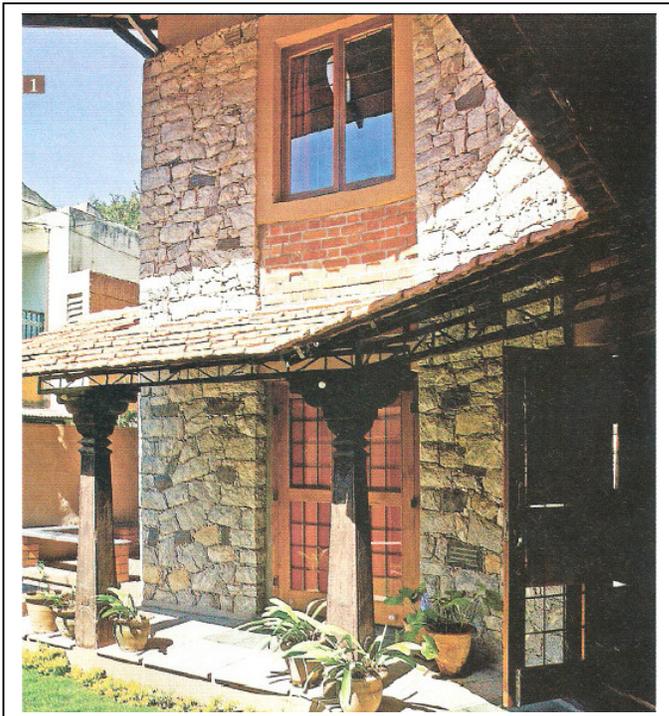
Project Proposes to build 30,000 schools , all over India between the years 2010 – 2020 based on Traditional Indian / Vernacular / Sustainable Architecture ...

Examples of Low Cost , yet very elegant designs that are possible with Traditional Indian Architecture ...



Kindergarten

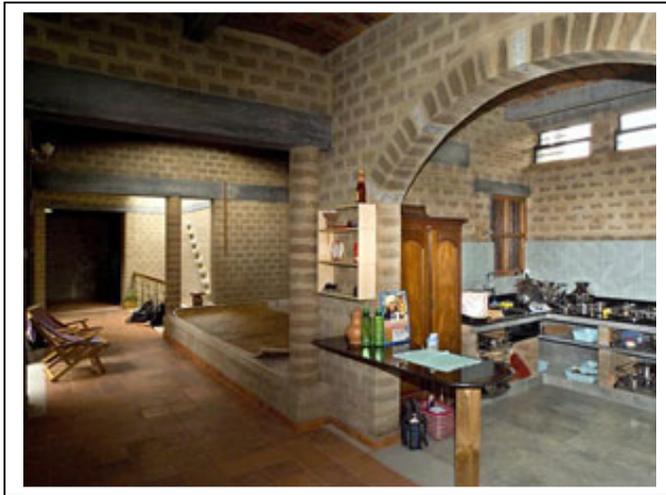
Auroville Architects



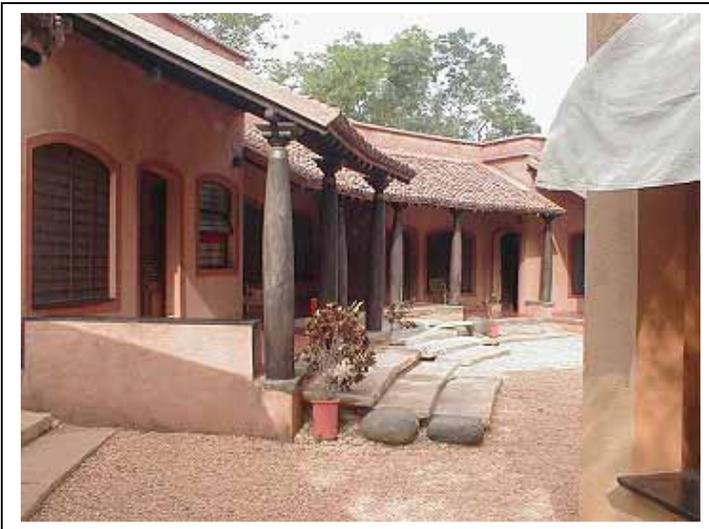
Private Residence  
Bangalore  
Actual Cost Rs 750 / Sq Ft

Sample Of A Teachers House that the  
Project will deliver

Architect : RL Kumar



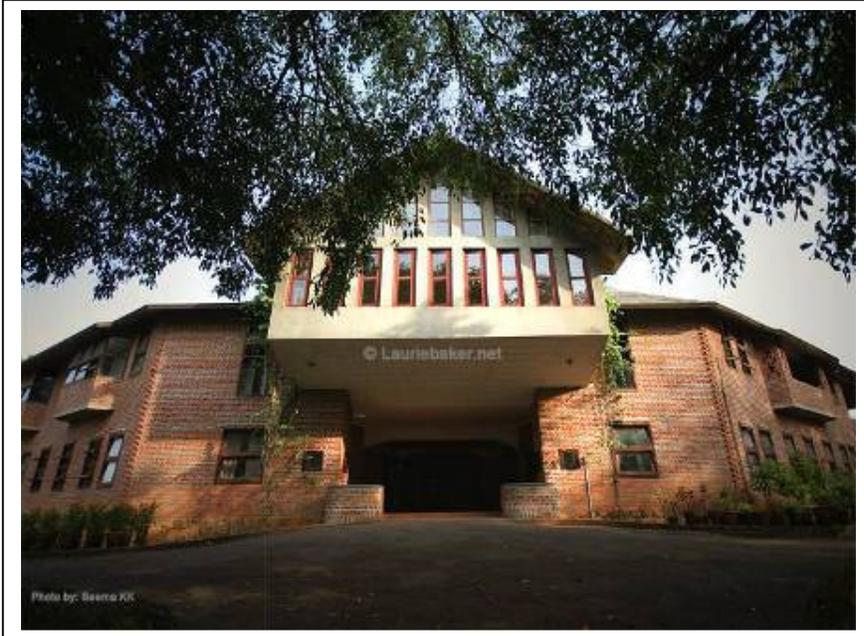
Private Residence  
Auroville Architects



Atithi Niwas, Auroville  
Architect : Dharmesh Jadeja



Deens Academy  
Whitefield Bangalore  
Cost : Rs 690 / Sq ft  
Architect : RL Kumar



Centre for Development Studies  
 ( Trivandrum )  
 Laurie Baker Construction  
 Approx Cost : 700 / Sq Ft



Deens Academy  
 Whitefield Bangalore  
 Cost Rs 690 / Sq Ft

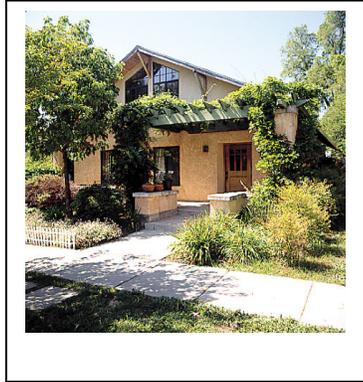


Peepal Tree School  
 Bellary , Karnataka  
 Cost : Rs 650 / Sq Ft  
 Architect : RL Kumar

**Delivered Cost of construction**

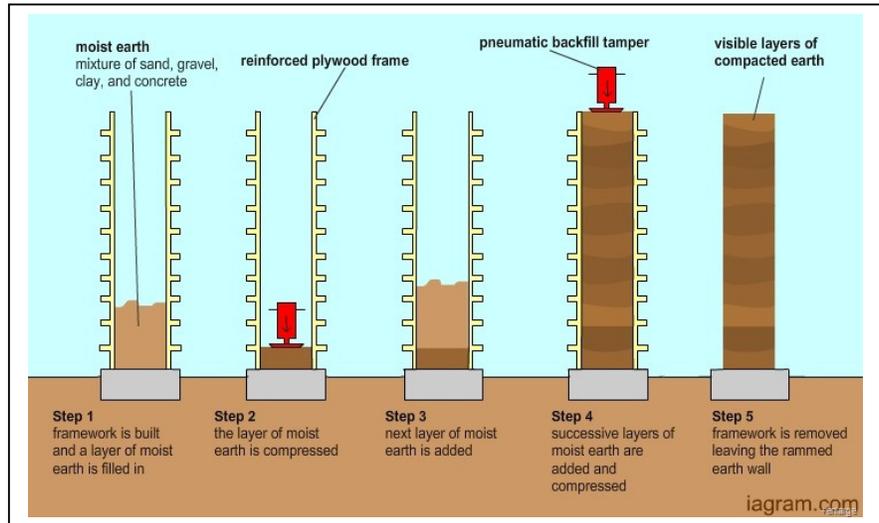
As conceived , all schools will be delivered , fully furnished , with furniture but not including air conditioning at a maximum cost of **Rs 800 – Rs 850 / Sq ft**. The costs will be much lesser as scale economies are reached and the necessary artisans skilled in Traditional / Vernacular Architecture are trained.

# Rammed Earth Construction



**These houses are built just by stacking Mud and Clay.**

**Construction can easily be up to 2 stories.**



*Handwritten signature*

Project Visualizer  
The Nataraja Foundation  
[www.nataraja.org.in](http://www.nataraja.org.in)

“ Determine that a thing can and shall be done, and then, we will ... find a way ” – Abraham Lincoln

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