

A report on

Roadmap for Rural India

Creation of wealth and happiness!

A one day workshop on awakening the young engineers to discover
romance of innovation in renewable energy sources

Organized by

**Nimbkar Agricultural Research Institute (NARI)
Phaltan**

At

NARI Center for Sustainable Development

On

16th March, 2015

Introduction:

Even 67 years after independence, 60% of our rural population (100 million households) lives in conditions of poverty. They lack the basic amenities of life that we take for granted. For example they live in one-room huts with nearly non-existent electricity; cook on primitive biomass cook stoves which produce tremendous indoor pollution; lack potable water and toilet facilities. Somehow modern technology has not touched their lives. According to the latest World Bank report, 33% of the world's poorest live in India!

Yet, there is another India which has an ambitious space program, is a world powerhouse in the Information Technology (IT) sector, and aspires to have an economy that is among the top five of the world. Unless and until that 60% rural population is brought into mainstream development and their lives improved, India cannot become a great nation and join the league of major economic powers.

The process, to bring this rural population in mainstream development or make them self-sustainable, is what "Roadmap for Rural India". We should approach the rural problems and poverty by being personally engaged in it. For this, we have to bring best brains of country to engage in rural development.

"Roadmap for Rural India" organized by NARI, Phaltan is such a workshop, to attract young engineers and make them aware about rural problems. Workshop also delivered the sustainable work done in NARI to give hint to those smart brains about how they can start and what can they do.

Workshop was organized on 16th March, 2015 and 42 participants of various engineering colleges from Pune, Baramati and Phaltan were part of it.

ROADMAP FOR RURAL INDIA

AGENDA

- | | | |
|----------|---|---|
| 09:00 am | - | Arrival, reporting and registration |
| 09:30 am | - | Welcome note by Dr. Nandini Nimbkar, President, NARI |
| 09:35 am | - | Session on “Roadmap for Rural India” by Dr. Anil Rajvanshi |
| 10:20 am | - | Question Answer session |
| 10:50 am | - | Tea break |
| 11:05 am | - | Formation of groups and NARI campus walk |
| 12:00 am | - | Brainstorming Questionnaire |
| 12:30 pm | - | Lunch break |
| 01:15 pm | - | Case study: “ <i>Village ke andar, phas gaya Engineer</i> ” |
| 02:15 pm | - | Reading out the solutions/answers/ideas by team captains |
| 03:00 pm | - | Tea break |
| 03:15 pm | - | Interactive session with Dr. Anil Rajvanshi |
| 04:15 pm | - | Essay writing task: “10 things I want to change in Rural India” |
| 04:45 pm | - | Feedback writing and distribution of Certificates |
| 05:00 pm | - | Ready to leave |

Workshop over...

How the day passed...

Participants reported till 9:30 am.

At 9:30 am, workshop was inaugurated formally with the welcome note by Dr. Nandini Nimbkar, President, NARI. This was followed by a lecture entitled “Roadmap for rural India” by Dr. Anil K. Rajvanshi. Dr. Rajvanshi outlined the key points regarding the challenges in rural areas, household energy, rural livelihoods, bringing best brains to rural areas and happiness through innovations in a 45 minutes presentation. Dr. Rajvanshi gave briefing to all young engineers about what needs to be done, strategy for rural development, how NARI is working on such problems, what is precision farming, how we can create energy from farm, how to deal with life to achieve happiness through innovation.

The presentation was followed by lively question answer session.

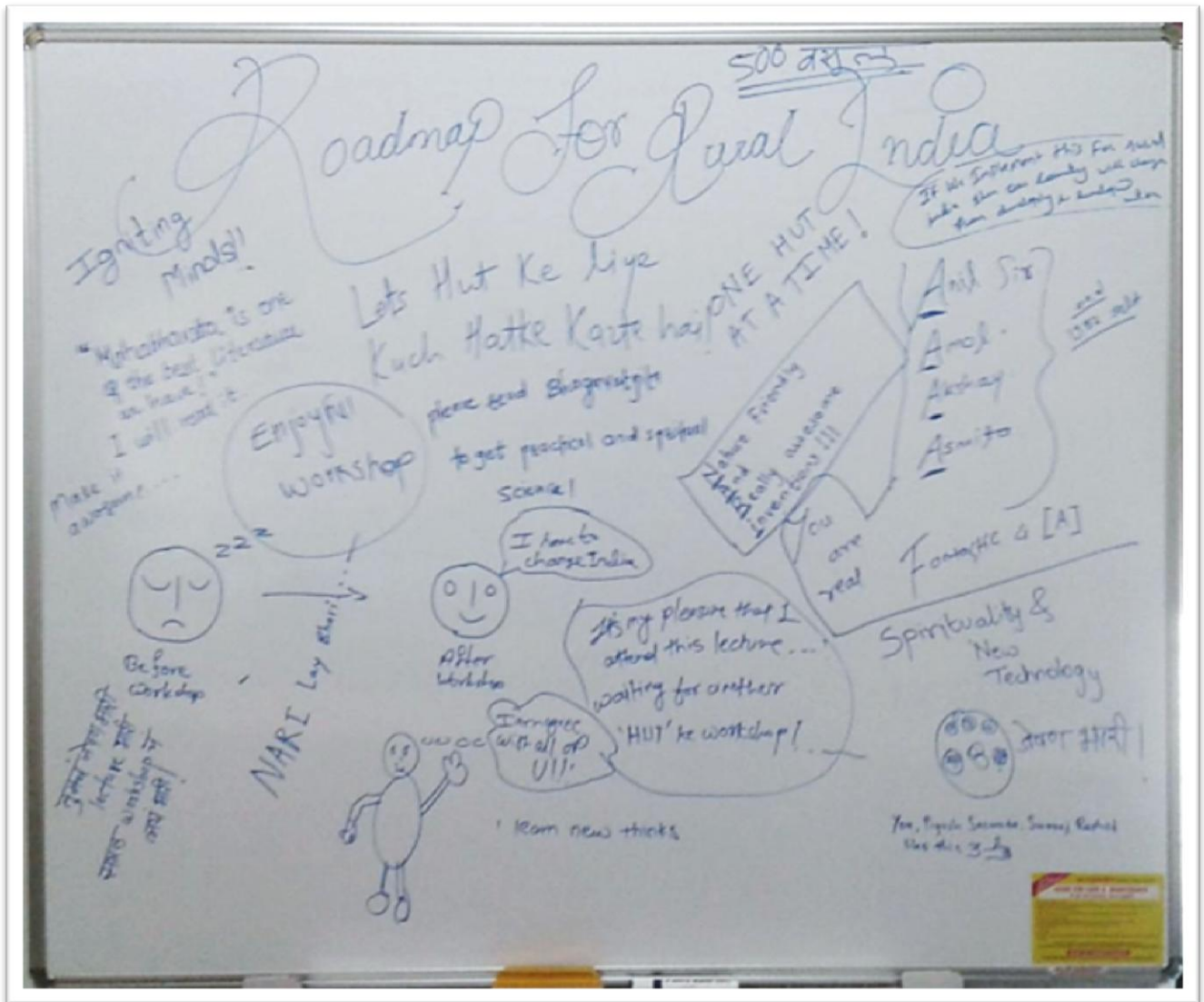
After tea break, participants were taken for NARI campus walk. Participants were divided into 3 groups each headed by NARI interns Ms. Asmita D’souza, Mr. Akshay Kumbhar and Mr. Amol Dalvi. Participants were shown various NARI projects like IMPRA, MAPRA, MANHARA, ELEKSHAW, Lanstove, Solar Sterilizer, Solar Ethanol Distillation, Solar Still, Biomass Gasifier, etc. They were also taken to library, chemistry lab, pathology lab and microscope room.

After an hour of campus walk, participants were asked to fill brainstorming questionnaire. This was a self-analysis assignment of basic questions we encounter daily but never give a thought to them. Questionnaire filling was followed with lunch break. Participants enjoyed the delicious food and returned to hall for group task.

Lunch was followed by students engaging in thought experiment of case study of rural village. Participants were asked to solve the problems of that village with available resources. They were allowed to roam around campus and discuss in their respective groups. All dispersed for an hour to list out their solutions for rural problems. An hour later, all participants gathered in the hall to read out the solutions. A group captain from each group recited the solutions listed by them. After the hectic time of discussion, tea was served.

After tea, Dr. Rajvanshi interacted informally with all participants. Discussions took place on various topics such as mindset of Indian farmers, Spirituality, Gasifier, Social Entrepreneurship, Solar refrigerator, etc, etc.

After the discussion participants were given a piece of paper to write about 10 things that they want to change in rural India. This was individual task. Mostly raised topics by everyone were about water, electricity, education, health facilities, awareness sanitation and cleanliness, employment, irrigation, awareness of government policies, etc.



Appendix:

1. NARI campus walk:

List of projects:

1. Lanstove
2. Ethanol stove
3. Solar Sterilizer
4. MAPRA, IMPRA, MANHARA, electric trike and ELECKSHAW
5. Biomass Gasifier
6. Solar still
7. Wind mill
8. Ethanol Distillation plant on solar energy
9. Solar pump and solar water heating system
10. Solar petal collector
11. Household Refrigerator working on Absorption Refrigeration cycle

List of Equipment:

1. Gas chromatographer
2. Conductivity Bridge
3. Lux meter
4. Stroboscope
5. Pyranometer
6. Weather station
7. CO meter
8. Balancing on lathe
9. Seed germinator

Library, Chemistry lab, Pathology lab and Microscope room

2. Brainstorming Questionnaire:

Put weightage in the box in front of the statement given below such that, to how much extent it applies to me? Put numbers between 1 to 10. 1 will be considered as hardly applies to me and 10 as exactly applies to me, hence do accordingly to rest of the numbers.

- | | | |
|---|----------------------|----------------------|
| • My duty is only to cast vote.
मतदान करून माझं कर्तव्य पूर्ण झाले, असे मी समजतो. | <input type="text"/> | <input type="text"/> |
| • Everyone from village should migrate to metropolitan city.
खेड्यातील जीवन सोडून सगळ्यांनी शहरात रहायला यावं. | <input type="text"/> | <input type="text"/> |
| • You must have a big bank balance to live a happy life.
आनंदी आयुष्य जगण्यासाठी खूप अर्थसंचय असावा. | <input type="text"/> | <input type="text"/> |
| • Being materialistic is a part of a sophisticated lifestyle.
चंगळवाद हा आधुनिक जीवनशैलीचाच एक भाग आहे. | <input type="text"/> | <input type="text"/> |
| • I always use dustbin for waste.
मी कचरा कचराकुंडीतच टाकतो. | <input type="text"/> | <input type="text"/> |
| • Development means adapting western lifestyle.
विकास म्हणजे पाश्चिमात्त जीवनशैलीचा अवलंब होय. | <input type="text"/> | <input type="text"/> |
| • A foreign job is always being my fantasy.
विदेशात नोकरी करणे, हे नेहमीच माझं स्वप्न राहीलं आहे. | <input type="text"/> | <input type="text"/> |
| • It is better to work for my village than being a part of the rat race of corporate world.
शहरातल्या एखाद्या विदेशी कंपनीपेक्षा मला माझ्या गावी जाऊन काम करायला आवडेल. | <input type="text"/> | <input type="text"/> |
| • I honestly follow traffic rules.
मी वाहतुकीचे नियम पाळतो. | <input type="text"/> | <input type="text"/> |
| • I have 24X7 availability of water and electricity, so I use it abundantly.
मला अखंडित पाणी व वीज पुरवठा आहे, म्हणून मी त्याचा अविवेकी वापर करतो. | <input type="text"/> | <input type="text"/> |
| • Government is totally responsible for all dirtiness in the country.
देशातील अस्वच्छतेला सर्वस्वी सरकार जबाबदार आहे. | <input type="text"/> | <input type="text"/> |
| • Running “Swachha Bharat Abhiyan” is pride for our nation.
"स्वच्छ भारत अभियान" राबवणे, ही भारतासाठी अभिमानाची गोष्ट आहे. | <input type="text"/> | <input type="text"/> |
| • Shame for having largest number of malnourished children in India is more than pride for success of “Mangalyaan”.
मंगळयानाच्या यशापेक्षा, जगात सर्वात जास्त कुपोषित मुलं भारतात आहेत, ही गोष्ट मला जास्त सलते. | <input type="text"/> | <input type="text"/> |
| • My education should not be constrained to only my occupation, but also the society.
माझ्या शिक्षणाचा उपजीवीकेसोबतच समाजोपयोगी कामांनाही उपयोग व्हावा, असे मला वाटते. | <input type="text"/> | <input type="text"/> |
| • I refuse to use polythene bags wherever I go.
मी बाजारात गेल्यावर पॉलिथीनच्या थैलीला नकार देतो. | <input type="text"/> | <input type="text"/> |

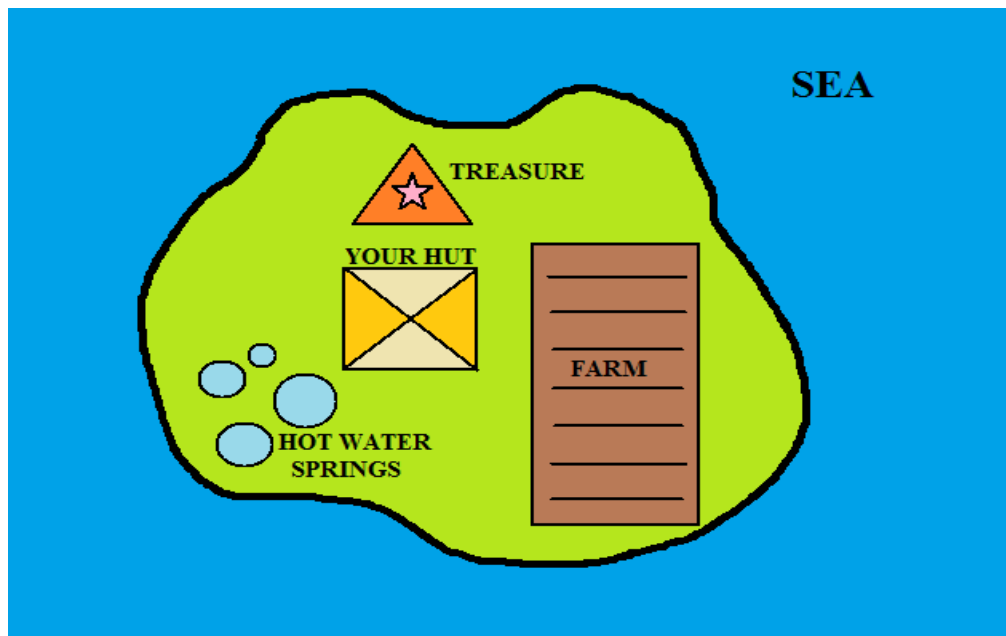
3. Case study: “Village ke andar, phas gaya Engineer”

- Please go through the problem **attentively**.
- List out your innovative ideas or solutions for the problem. Solutions should be short and particular. (Paper will be provided by organizers.)
- Utilization of each and every resource/entity is not mandatory, but external entity/resource should not be introduced. [**You can use internet to gather information.**]

You are trapped in village which is nothing but an island, surrounded by sea. Village has sufficient rainfall. During no-rain time, plenty of sunlight is available. There is a hut which does not have electricity. A farm full of vegetables is just nearby. Island has some hot water springs. And Ohh! UREKA!!! You find a treasure on island. Treasure contains following things:

Glass sheets	Solar collectors/panel	Charcoal	Wiring
Batteries/PV cells	Cotton cloth	Sand	Valves
Ordinary stove	Metal pots/utensils	LED bulbs	Piping
Petromax lamp	NH ₃ & LiBr solution	Rice straw	Small battery operated pump
Bicycle	Magnet	Springs	Spray bottle
Radiator	Soldering/Brazing gun	Matchbox	Alcohol

You have to survive on the island by overcoming your fundamental needs of water, cooking, lighting, food storage, etc. List out your ideas, how will you live your entire life **IN A RURAL HUT??**



4. Feedback form:

Give rating between 1 to 5.

- | | |
|--|---|
| 1. Content of workshop | - |
| 2. Management- food, accommodation, etc. | - |
| 3. Managers- behavior, cooperation, etc. | - |

Improvements/ Suggestions:

Overall thought for workshop:

Would you like to attend it again? Y/N

Would you like to tell your friends about this? Y/N

THANK YOU!!

5. Feedback Analysis:

Rating of workshop (out of maximum 5)

Content of workshop	Management	Managers
3.9	4.9	4.7

Suggestions:

Suggestions	No. of responses	Percentage, %
Actual working of what we are showing	5	11.90
Case study: discussion and conclusion	1	2.38
Reduce fees	4	9.52
Multi-disciplinary content	3	7.14
More time for campus walk	5	11.90
Increase technical content and explanation of projects	7	16.66
Mosquito and honey bee problem	2	4.76
More exposure to rural problems	1	2.38
Convey change in agenda well in advance	1	2.38
Get more students	2	4.76
Can add simple games/ activity	1	2.38
Interactive session to be on particular topic	2	4.76

Some valuable comments about worksop....

- Excellent and outstanding!
- Unforgottable experience!!!
- Awsome/ fantastic!!
- Something different!!
- 3 idiots school..!!
- Intersting!!
- Thouroghly enjoyed..!!
- Casestudy was best..!!
- "Village ke andar.." was awesome!!
- Inspired...!
- Great contribution by Rajvanshi sir to rural India! Really motivated from him!!
- Anil sir was such an inspiration that I ever met!!
- Workshop was great..No... it was awesome!!
- I fill very lucky to attend this workshop!
- Best workshop I ever attended!!
- 5++ for food! 5+ for managers!!
- You taught us real engineering..!!
- Hard to realise, how did day time pass? Nice involvement!!
- Food was yummy!! Managers were frank and helpful...!!
- Well thought and well delivered!!

Glimpses of workshop...









