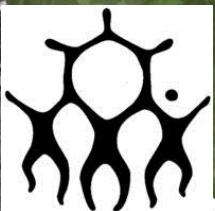




Designing Institutions for social transformation:

models for scaling up inclusive grassroots innovations



Anil Gupta, IIMA,
Honey Bee Network and NIF
anilgb@gmail.com www.nifindia.org www.sristi.org

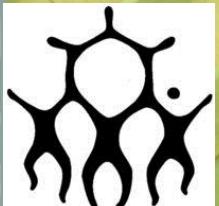
Five Models of inclusive social innovations

- a)bridges, brokers and benevolent bania (money lender, informal or formal like bank or micro finance) -1987; reducing the transaction costs of innovators, investors, and entrepreneurs
- b)Meeting unmet Needs: Need-felt or unfelt, articulated, not articulated, aggregated or not aggregated, registered or not registered, responded or not responded, 1990
- c)Spawning, Sustaining, and Scaling up local or grassroots innovations, 1988-89, Honey Bee Network
- d)5-S and 4-A model; exclusion over space, skill, sector, season, and social segment; Access, Assurance, Ability and Attitude towards resources, institutions, technology and culture (1988, 1992, 1995)
- e)Accessibility, Affordability, Availability and augmentability, 2014-15

Dimensions of Inclusion

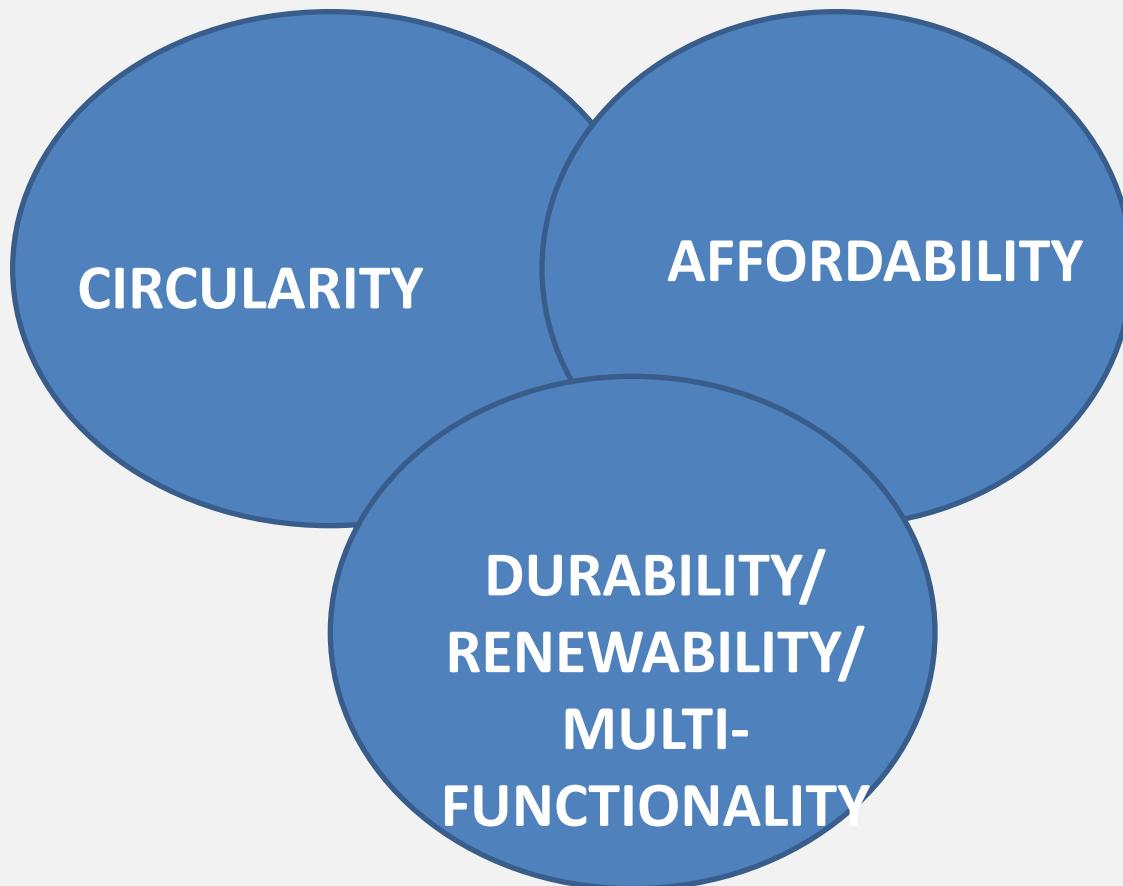
BYPASSED

- Spaces
- Sectors
- Seasons: stable to fluctuating
- Social segments
- Skills and knowledge



Inclusive Frugal Innovation

Form, feature and function



Accessibility

Adaptability &
redesignability

Affordability

Reliability,
Environmental
suitability

Availability

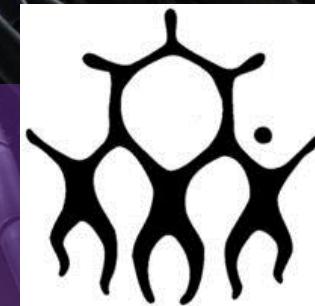
Redesinability
Acceptability

IS FRUGALITY RELEVANT ONLY FOR POOR?

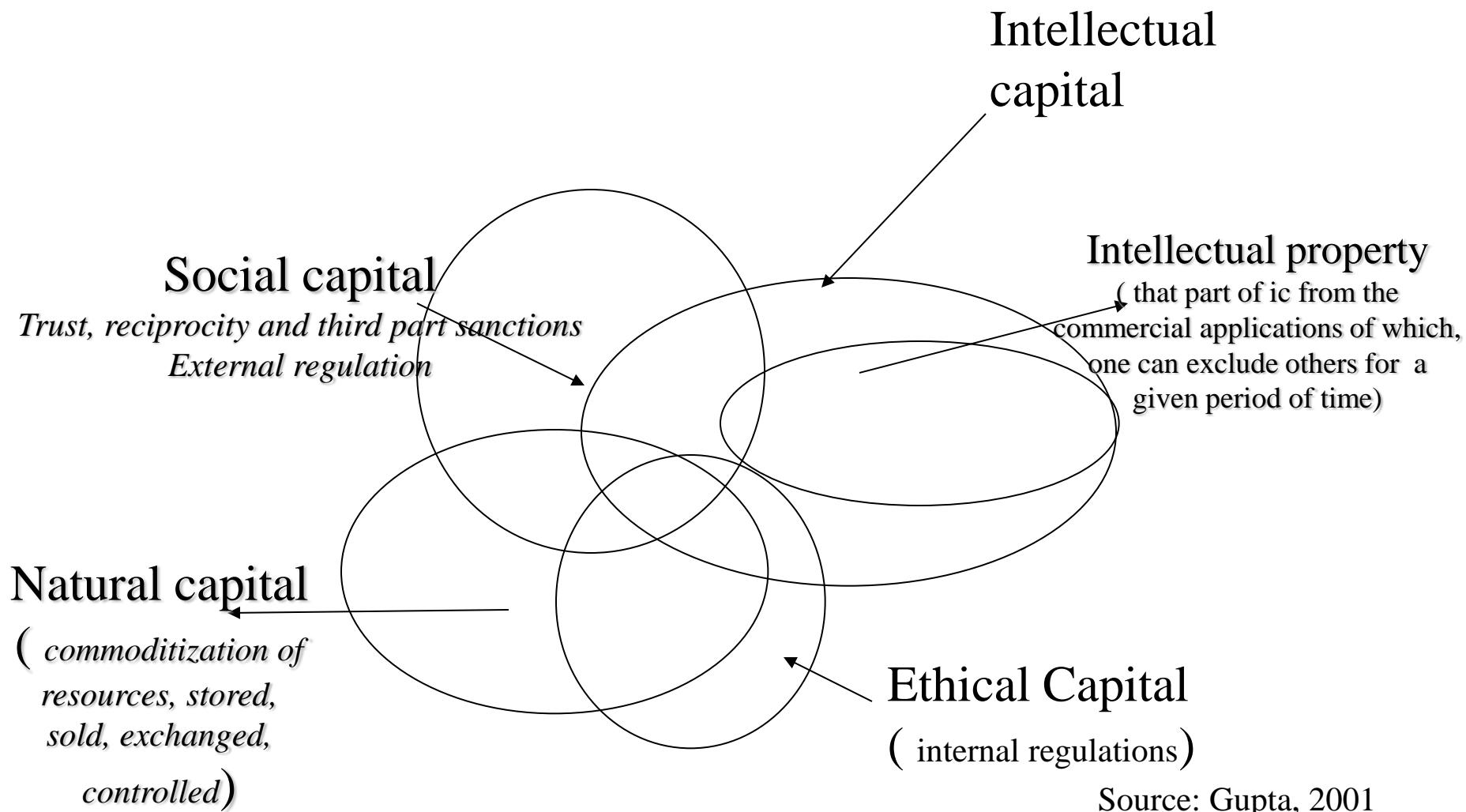
- DEMATERIALIZATION
- PLANNED RENEWABILITY
- EACH COMPONENT TO HAVE FATIGUE FACTOR IMPRINTED
- MARKET FOR USING PARTS WITH UNTAPPED ENERGY LEFT, TO DELAY ENTROPY
- SUSTAINABILITY IS THE SOUL OF FRUGALITY

Honey Bee Network

founded in 1987-1988

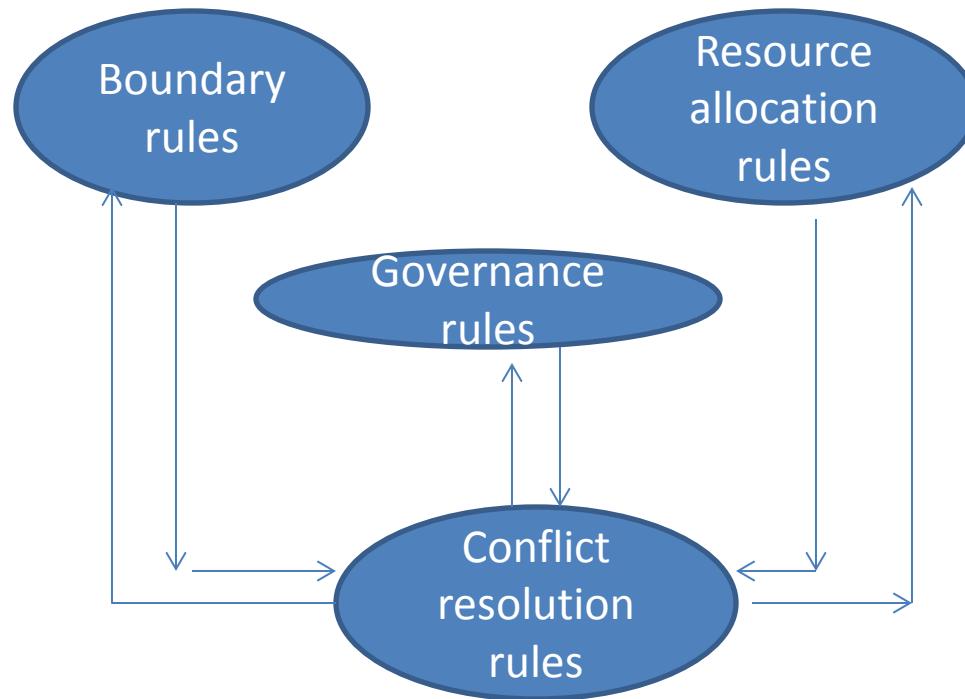


A nameless, faceless innovator or traditional knowledge holder comes into contact with the Network and gets an identity, voice, visibility and viability of its sustainable vision .



Bridging the gaps left unmet by markets and state

Values in Vogue: Institutional Pathways for Sustaining Grassroots Innovations for Creating Public Goods

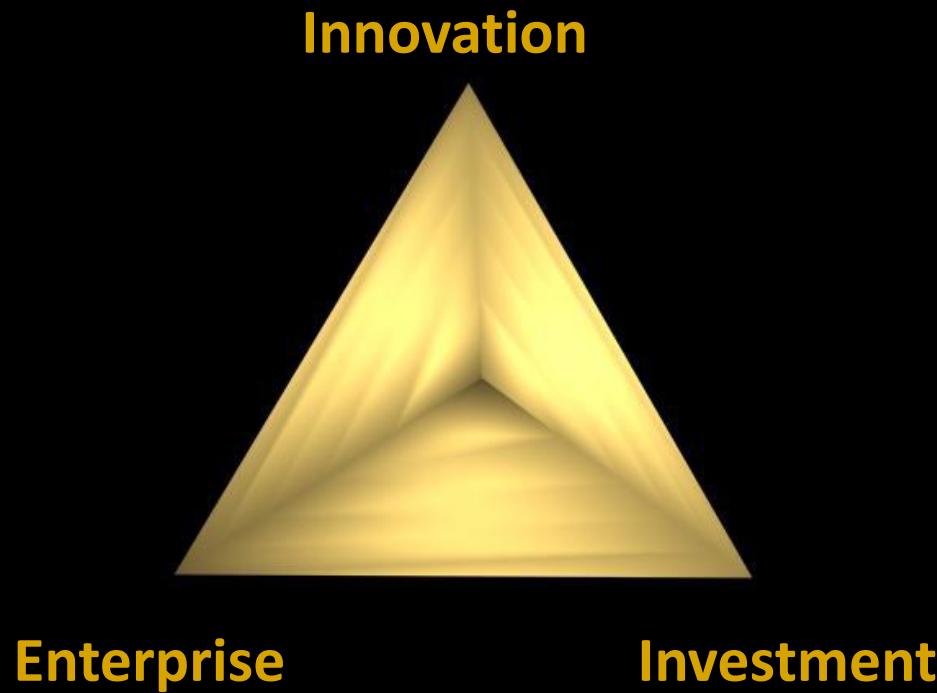


Source: Gupta, 1985

GOLDEN TRIANGLE for rewarding CREATIVITY

Leadership is
to take note of
ex ante and *ex
post*
transaction
costs and deal
with them
upfront,

If not, these are
transferred to the
weaker partner



Overcoming knowledge and power asymmetries

- The *ex-ante* transaction costs have four components:
- (i) searching information about innovation, investment, fabricator, entrepreneur, policy maker, logistics provider etc.,
- (ii) finding supplier,
- (iii) negotiating social contract and
- (iv) drawing up the social contract.

- The ex-post transaction costs include
 - (i) monitoring and compliance,
 - (ii) side payments, i.e., concessions which can make the contract enforceable through modified inducements/ discounts,
 - (iii) resolution of conflicts if any and
 - (iv) redrawing the contract if none of the above help in going ahead with the contract.
- While designing the eco system, the institutions and actors have to reduce their transaction costs if any mediating platform has to have legitimacy.

blending

Passion,

purpose

and

Performance

Through

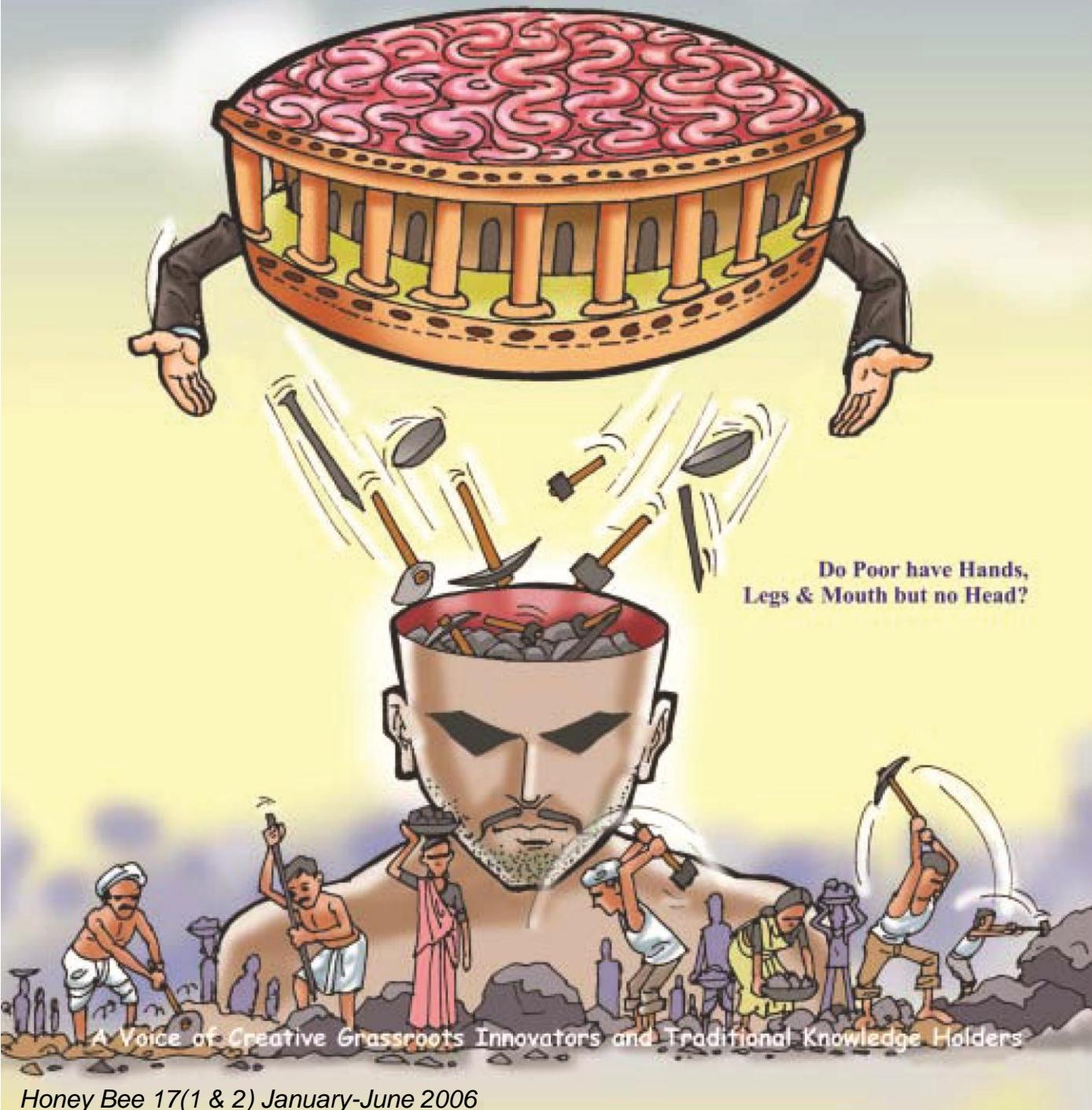
Platforms

**SRISTI, gian, National Innovation Foundation,
techpedia.in, Honey bee network**

**Next: open source multimedia multi-language content for children,
cultural creativity, innovations in governance**

1898, King of Gondal, Bhaawantsinh ii





From Microfinance to Micro Venture Innovation Finance(

gian, 1997, SIDBI at NIF, MVIF2003)

Micro finance is given for goods and services for which markets do exist

**some thing
needs to
change :)**

Micro venture finance is primarily for innovative activities for which demand is yet to be created



Making strategic breakthroughs

Domain characteristics

Technological platforms

	Known	Unknown
Known	incremental innovations, adaptive trials, user-led modifications. , incubation	R & D with external experts, new actors and new arrangements
Unknown	Product Development, amplify the form, features and functions	Paradigmatic disruption, discontinuity and non-parameteric approaches , sanctuary model

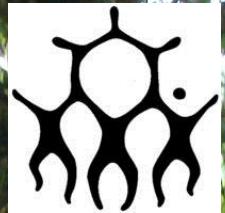
How to reward: Portfolio of Incentives for Innovations

Forms of Incentives

Target of Incentives	Material	non material
individual	material-individual Ipr or non ipr based awards Awards R and d grants Endowments	non-material-individual Recognition Honour Memorial
collective	material-collective Trust funds Venture and incubation funds Collective awards Support for Institution building Endowments	non-material-collective Policy changes Pedagogic changes



Sustainability equation



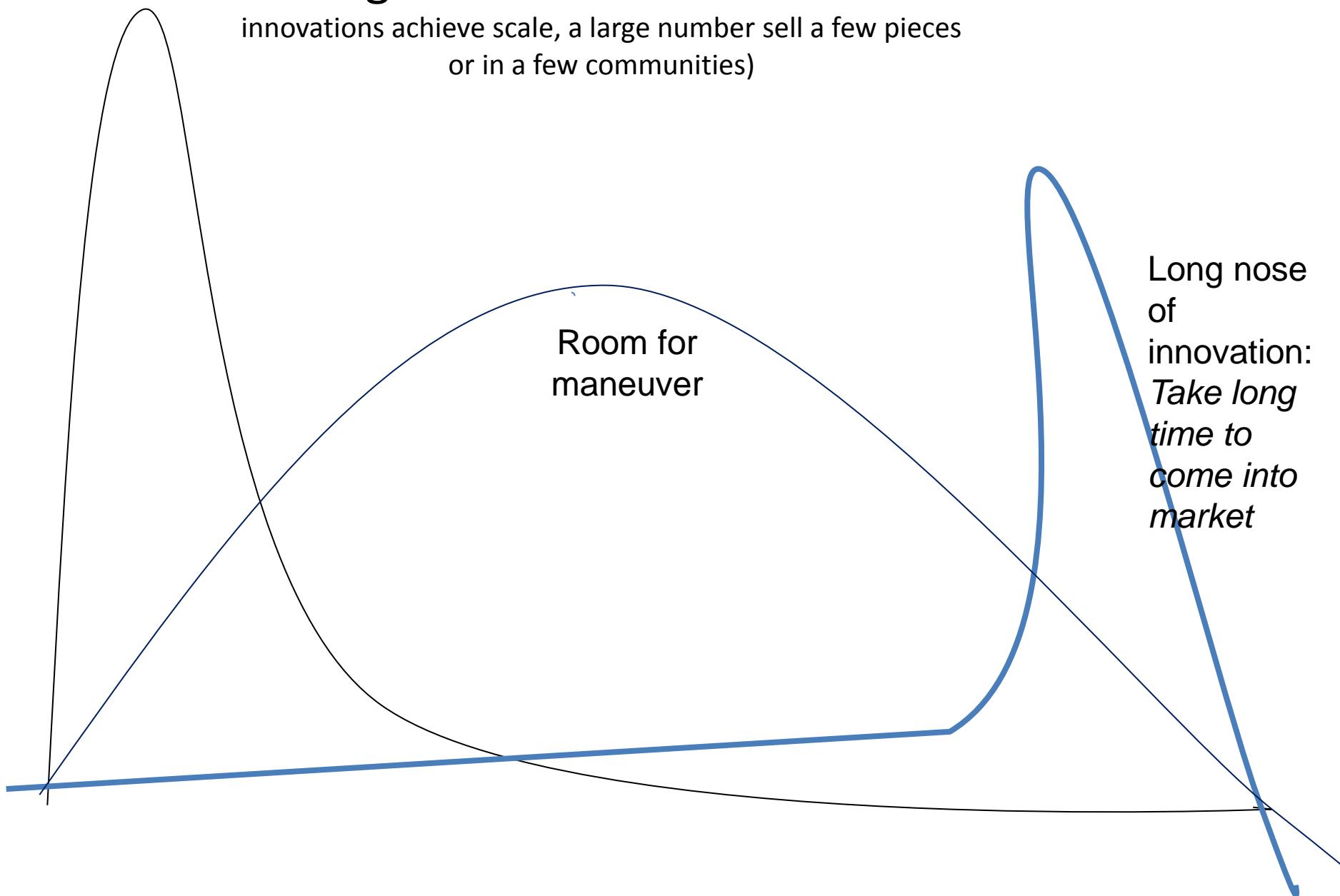
Meghalaya

Technology is like
words,
institutions are
like **grammar**
and culture is like
thesaurus

Three pillars of
sustainability

Long tail of innovation

(only a few innovations achieve scale, a large number sell a few pieces or in a few communities)

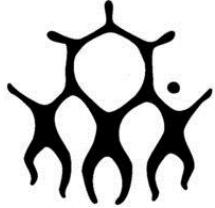


- 
- The background image shows a narrow, winding stone path through dense tropical foliage and trees, illustrating a natural learning environment.
- 1) Artefactual - as a replication of solution level
 - 2) Analogic - metaphor to inspire
 - 3) Heuristic - as a model or principle
 - 4) Gestalt - configurational level

Gupta, 2012, Own compilation



Learning platforms
from concrete to abstract



Few Variations of Bullet Santi / Handio





One of the kiln he uses today



Bicycle Hoe: China-India

Lao Yang, Shan dong province



Zhang Xingming, Shaanxi Province



**Wang Fuhe
Miyun County, Beijing**



Gopal Malhari Bhise, Ahmednagar, Maharashtra



A problem unsolved, but not any more

- Leadership is not having to live with problems unsolved indefinitely



The solution



- New hand pump has a provision of 25% water donation for the animal trough, which is collected from the runoff
- A provision of about 1 liter water storage inside the head of the pump which can be utilized through a tap for use as a drinking source just by pumping once



Dynamics of social unmet need assessment

assurance

low

high

Capacity
low

Unfelt, apathy,

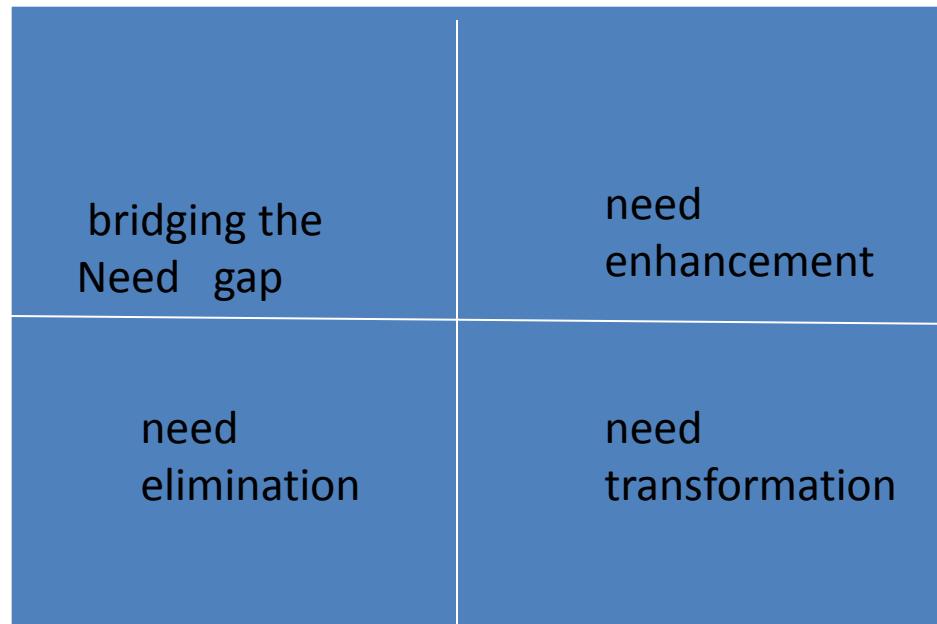
Assisted
Articulation of
need gap

Innovation,
self-design,
entrepreneuria
larticulation

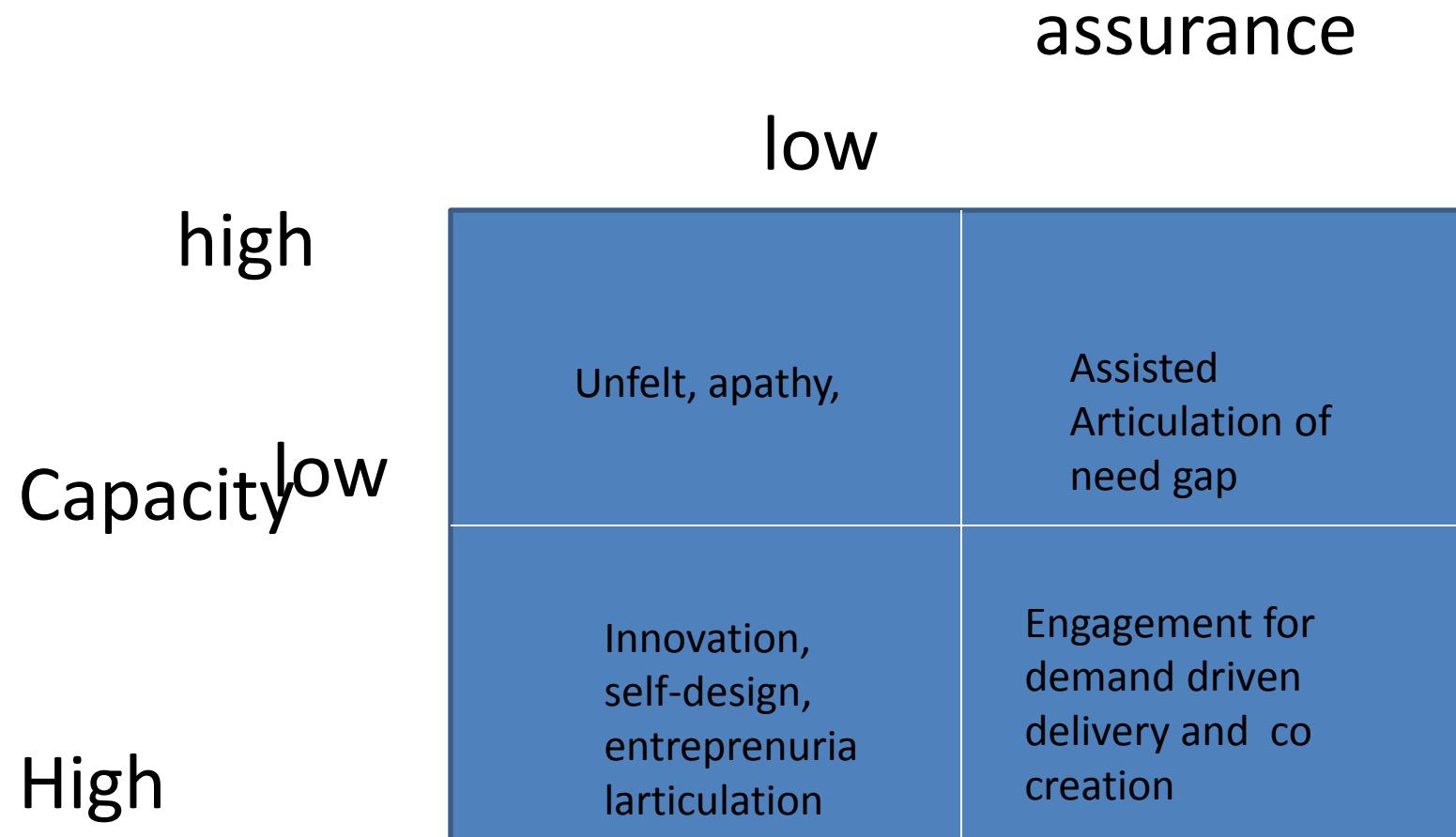
Engagement for
demand driven
delivery and co
creation

High

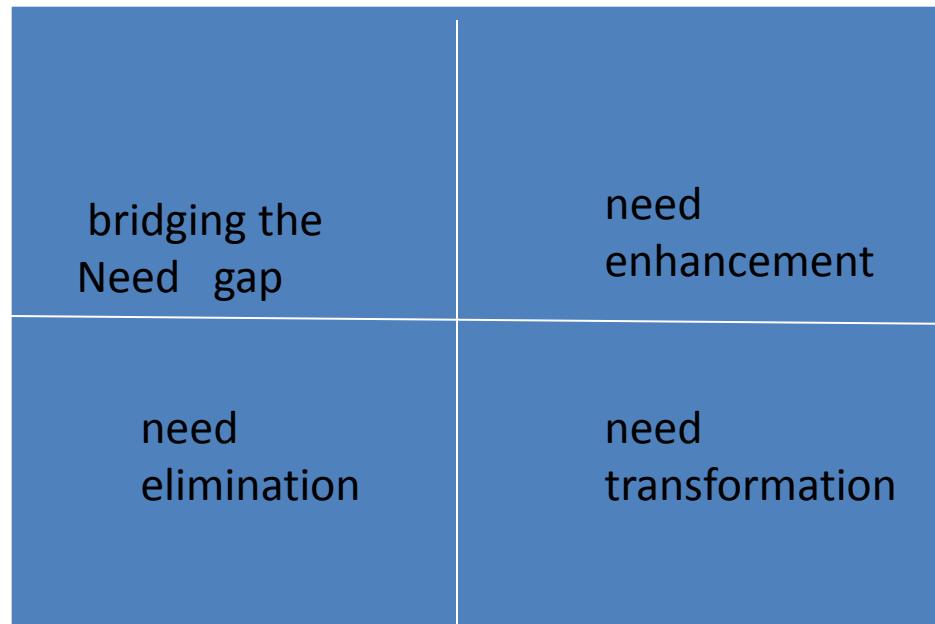
Taxonomy of innovative solutions



Dynamics of social unmet need assessment



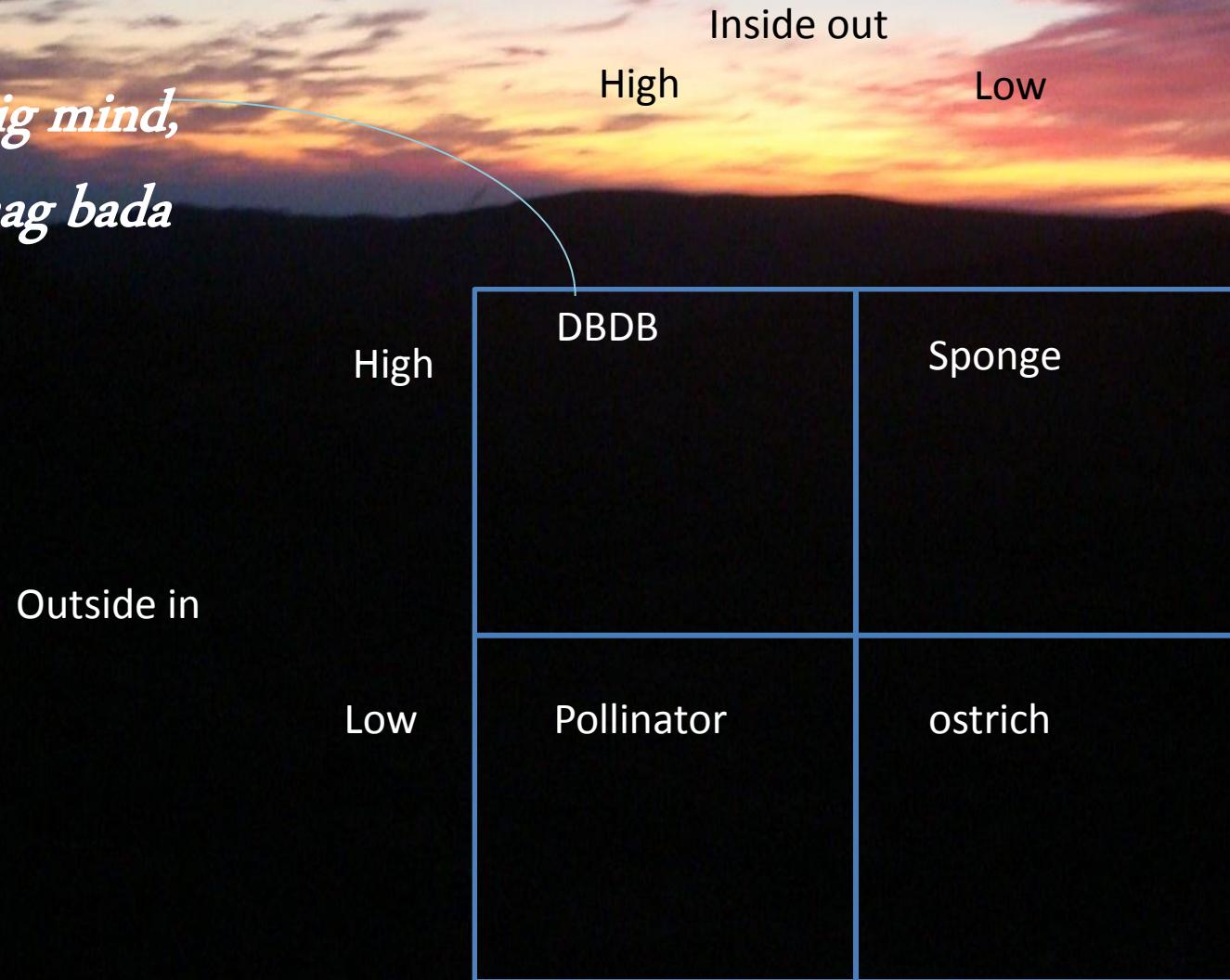
Taxonomy of innovative solutions



Information/Knowledge/Wisdom

Innovation Playground

*Large heart, big mind,
Dil bada dimaag bada*





National Innovation Foundation-India

Seventh National Grassroots Innovations and Outstanding Traditional Knowledge Award Function

सातवां राष्ट्रीय तृणमूल नवप्रवर्तन एवं
विशिष्ठ पारंपरिक ज्ञान पुरस्कार स



The President of India honours grassroots innovators, launches National Innovation Clubs and hosts an innovation exhibition at the President's house; NIF becomes an Institute of Department of Science and Technology



Initiative to Institutionalisation



The former President awards children innovators every year at the IGNITE Award function by NIF at IIMA



Initiative to Institutionalisation

National Innovation Clubs

- **Search:** Celebrating the decade of innovation by scouting and mapping the creativity and innovations in the hinterland
- **Spread:** Disseminating/Cross-pollinating innovations across spaces, social segments and sectors
- **Celebrate:** Recognising achievers in different social spheres
- **Sense or Benchmark:** Identifying the roots of *persistent problems* and the *mindsets* that trigger their *continued tolerance in society*



Ignite

Recognising creativity of children and nurturing
their dreams:

thank God, children are much less patient with inertia than us



Why pierce skin to
get a blood test done?

I wish to make a blood testing system
that would do the required test by
scanning the skin surface or testing
the skin excretions .right class iv



I want to integrate the
gait of a person with a mobile. As walking style differ person to person,
the software will be able to identify the signals based on the body movements while
walking

If the mobile will sense a different movement once act
will lock itself and send a message about its location
predefined number : anurag rathor 9th class



I want a high tech school bus
which can give alert signal as
it approaches my bus stop. I
would not miss my bus this
way!!: pallavi, 9th class





Modified walker with adjustable legs

**Shalini Kumari
Bihar**

Shalini's grandfather uses a walker to assist him while he walks. But she noticed that he could only use the walker comfortably while walking on a level surface. Shalini came up with the idea of the modified walker with adjustable legs. She has also thought of including a folding seat so that the user can rest for a while when required and fitted a horn and a light to it as well. NIF licensed this technology to a company recently



Innovation is simple
yet so obscure

roots of inertia



Posture correcting chair

Kulsoom Rizvi, 5, Muzaffarnagar, UP & Tarun Anand, 10,
Hardoi, UP



If a person is sitting on the chair in a wrong posture, an alarm will start ringing and not stop until the person corrects the posture. The height of the chair can also be adjusted using a handle.

Nisha Chaube
NOIDA
Bag with folding seat



Reading assistant for the blind/low vision people

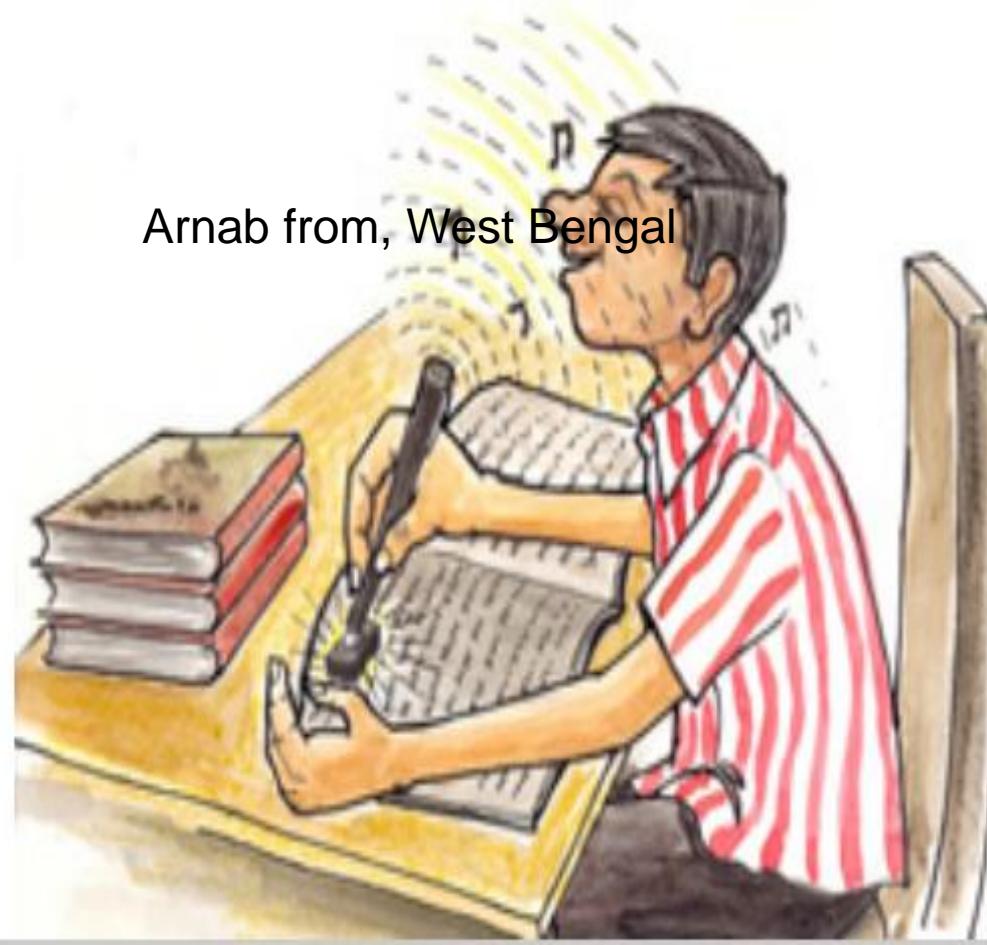
Mayank's idea is to develop a gadget that can be worn on a hand and which can be moved over text or braille. It uses sensors that scan text and braille and convert it into audio signals for the blind /visually challenged.

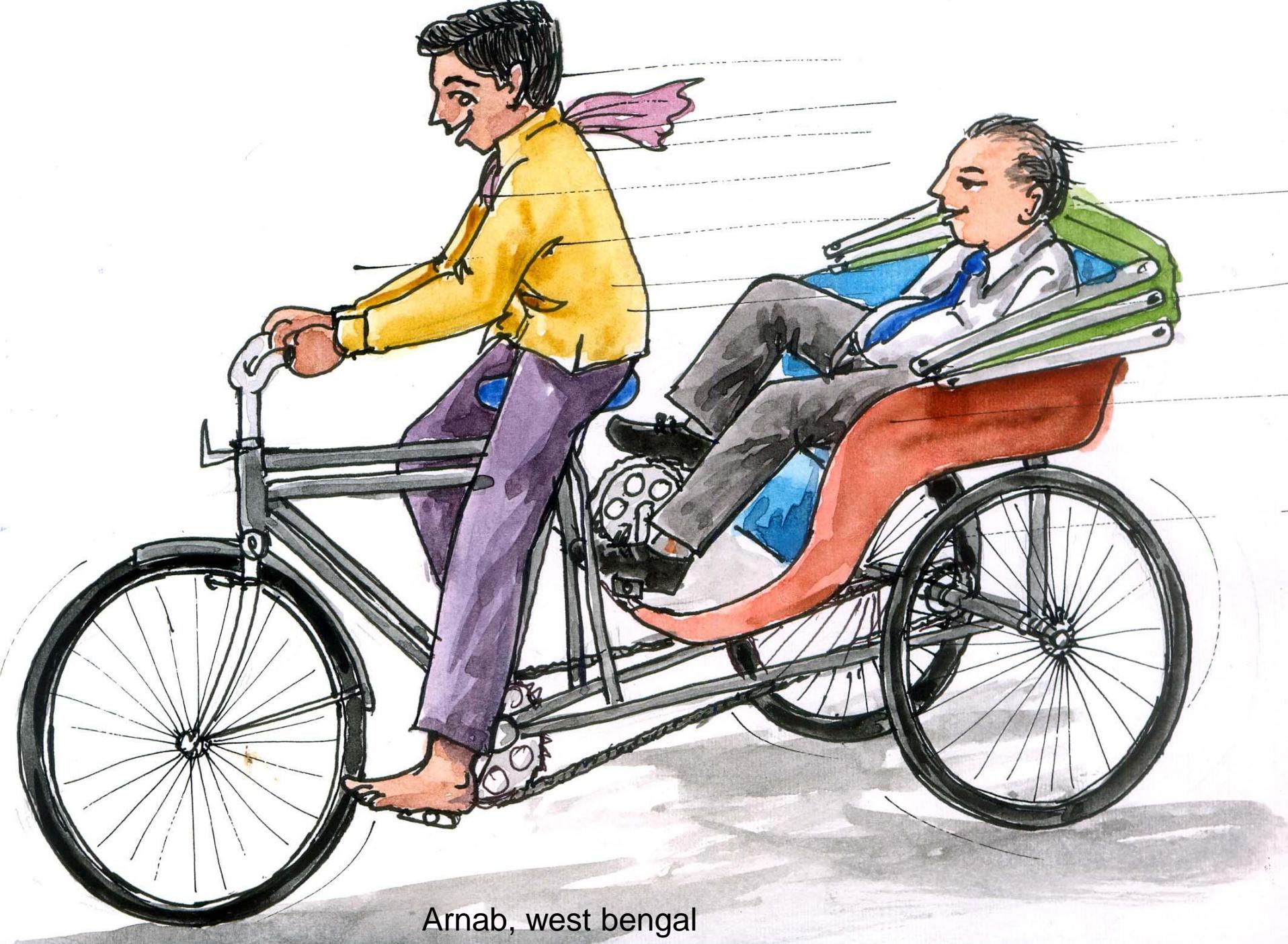


Mayank Walia

Class 12
Police DAV School
Jallandhar, Punjab

Arnab from, West Bengal

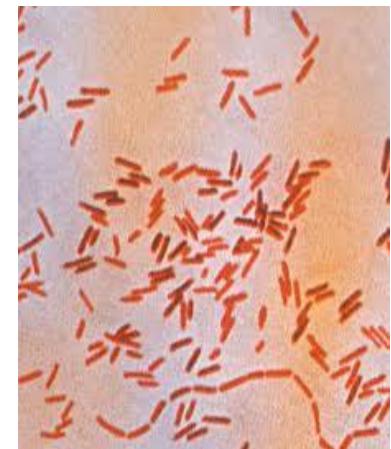




Arnab, west bengal

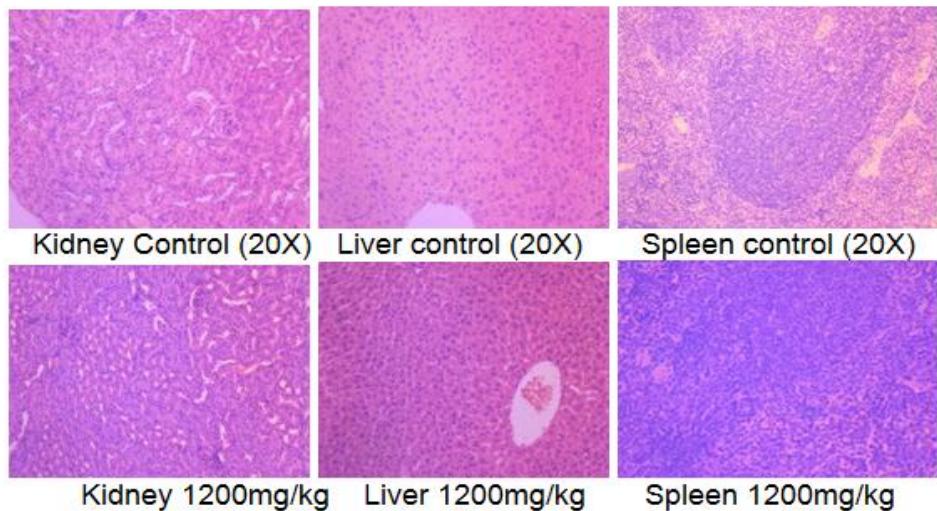
Typhoid Fever

- Typhoid is one of the most common worldwide bacterial diseases transmitted by ingestion of food and water, contaminated with *Salmonella typhi*. Poor sanitation conditions promote the occurrence and re-occurrence of typhoid
- Symptoms of typhoid includes frequent fever and gastric problems.
- Typhoid fever persist for three weeks to a month, which may be fatal if not treated.
- Treatment of typhoid includes various chemical drugs such as ampicillin, chloramphenicol, amoxicillin, ciprofloxacin etc
- Resistance of causal organism towards these commonly used drugs is one of the major concern worldwide. Typhoid resistance to these drugs are known as Multi Drug Resistant Typhoid (MDR-Typhoid)



Herbal Formulation for Typhoid:

- Extract and fractions obtained from *Shorea robusta* was evaluated against causal organism of typhoid and all of them showed good control in *in vitro* conditions.
- Toxicity of the above was also tested in *in vivo* conditions in Swiss albino mice at different dose and it was found non-toxic even at the oral dose of 1200mg/kg.





- a portal by SRISTI (sristi.org) pooling 167,000 engineering projects by 400k students from over 600 institutions
- engaging with youth



Bicycle Refrigerator For Rural Areas

Student/ Author : Sagar Chandrakant Gadkar, Amol Raghunath Kachare, Sanjay Shivaji Kachare, Suyog Hanmant Jadhav

Guided By : Prof. S. A. Khot

College : Padmabhushan Vasantrao Dada Patil Institute of technology, Budhgaon, Sangli

It is a 50 lit capacity, refrigerator which is powered by a rear wheel of bicycle. To achieve the required rpm of compressor we provide a larger pulley of dia 20 inch on rear wheel shaft through which pulley we run the compressor and achieved the required output. Steady paddling of bicycle at 14 km/hr. for 30 minutes at an ambient temperature of 35 °C, brings down the temperature in box to 8 °C.



Home

Registration

Challenge

Projects

IPR

NMN

Knowledge Bank

Events

Award

Entrepreneurship



Shanu Sharma, Vardan, IITK



Image, Speech Recognition and Speech Synthesis

for people with hearing and speaking disabilities



Saurabh Saket and Rahul Ranjan
Bhutta College of Engineering & Technology, Ludhiana



Lpg gas based refrigerator
Chintan, Mayank,
Biren Mehsana



Hot water from fridge
Dhruv Mehsana



Exhaust pipe
cools drivers
cabin, Pune



Has any big company given you a fridge that also provides hot water, keeps food warm and consumes less electricity?

Vazra, head load carrier by Lohar



Mind to Market

The Case of Herbavate



Herbavate Skin Ointment

It is based on the knowledge of seven innovators from six districts: Sabarkanth, Panchmahal, Dang, Mehsana, Patan and Bhavnagar of Gujarat. Herbavate exhibits remarkable properties against eczema and a variety of inflammatory and infectious skin conditions.

Communities:

The innovators of Herbavate: 1. Amratbhai Shankarbhai Rawal, Mehsana Gujarat. 2. Kunjubhai Kakadiyabhai Bhoya, Dang Gujarat 3. Pujabhai Dabhi, Sabarkantha, Gujarat 4. Karshanbhai Parmar, Sabarkantha Gujarat 5. Laxmanbhai Pagi, Panchmahal, Gujarat 6. Lilabhai Rawal, Patan Gujarat 7. Lakhabhai Becharbhai Khatana, Bhavnagar Gujarat



HERBAVATE



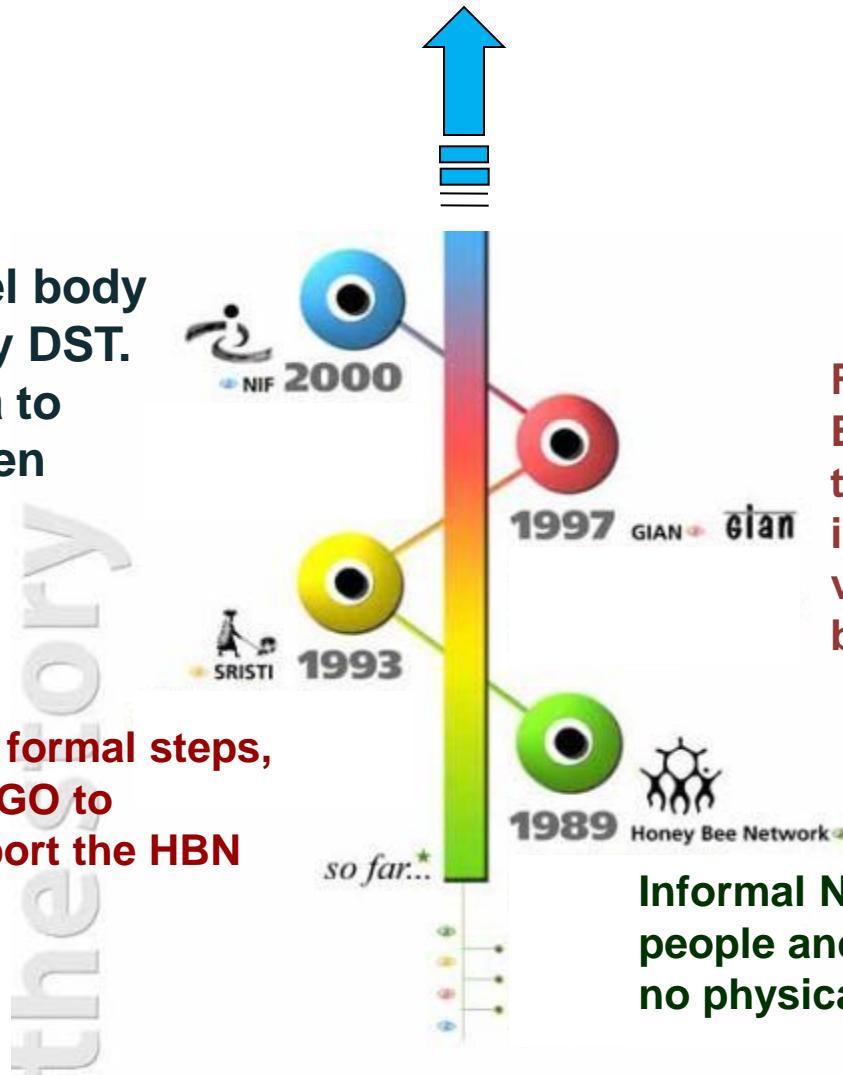
**Herbal medicine for
patients suffering with
dermatitis and psoriasis**



HBN- Incubator of Institutions

National level body supported by DST. Govt of India to scale up green grassroots innovations

First formal steps, an NGO to support the HBN

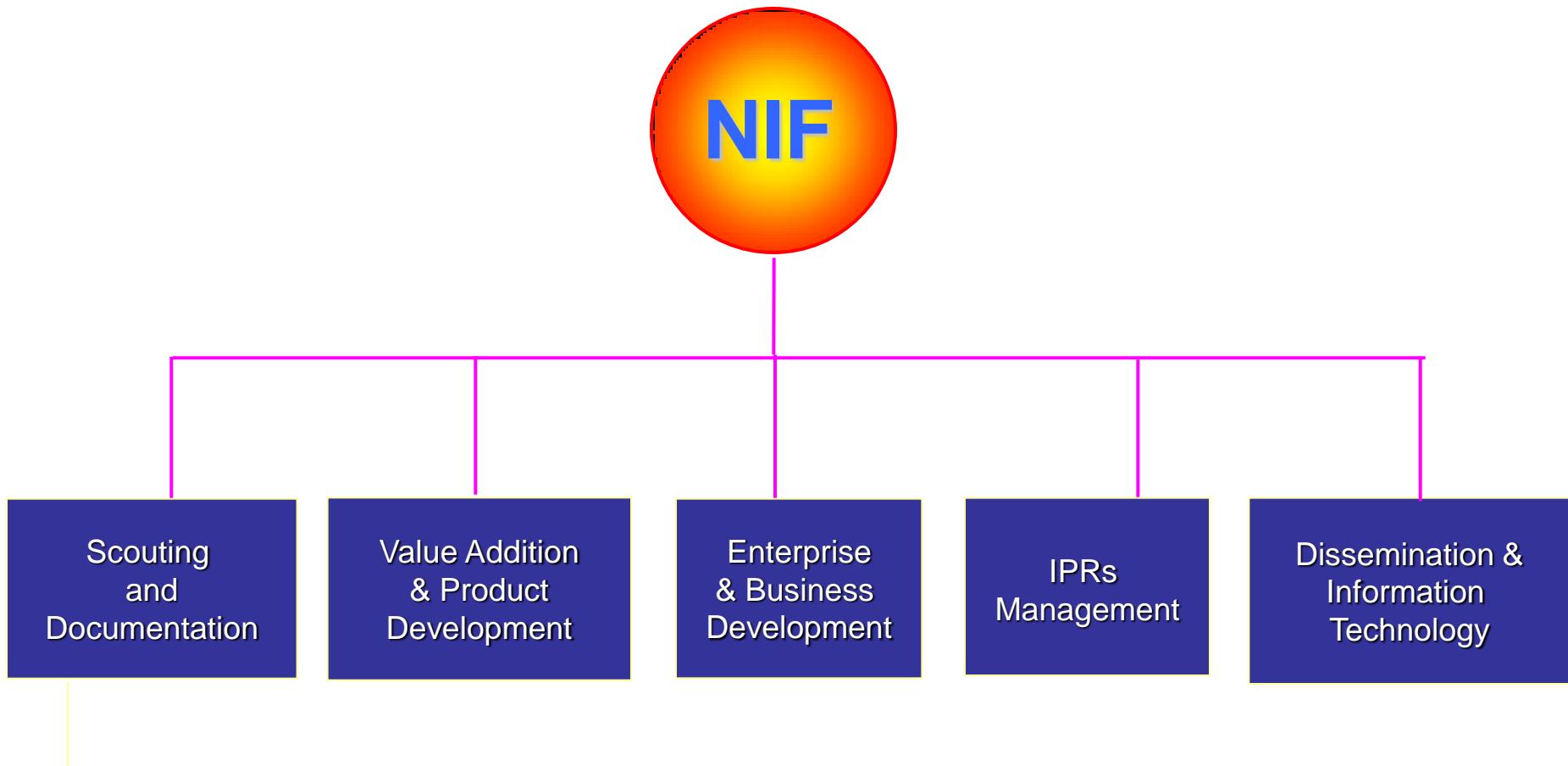


Regional Technology Business Incubators to augment grassroots innovation through value addition & business development

Informal Network of like minded people and organizations. It has no physical address



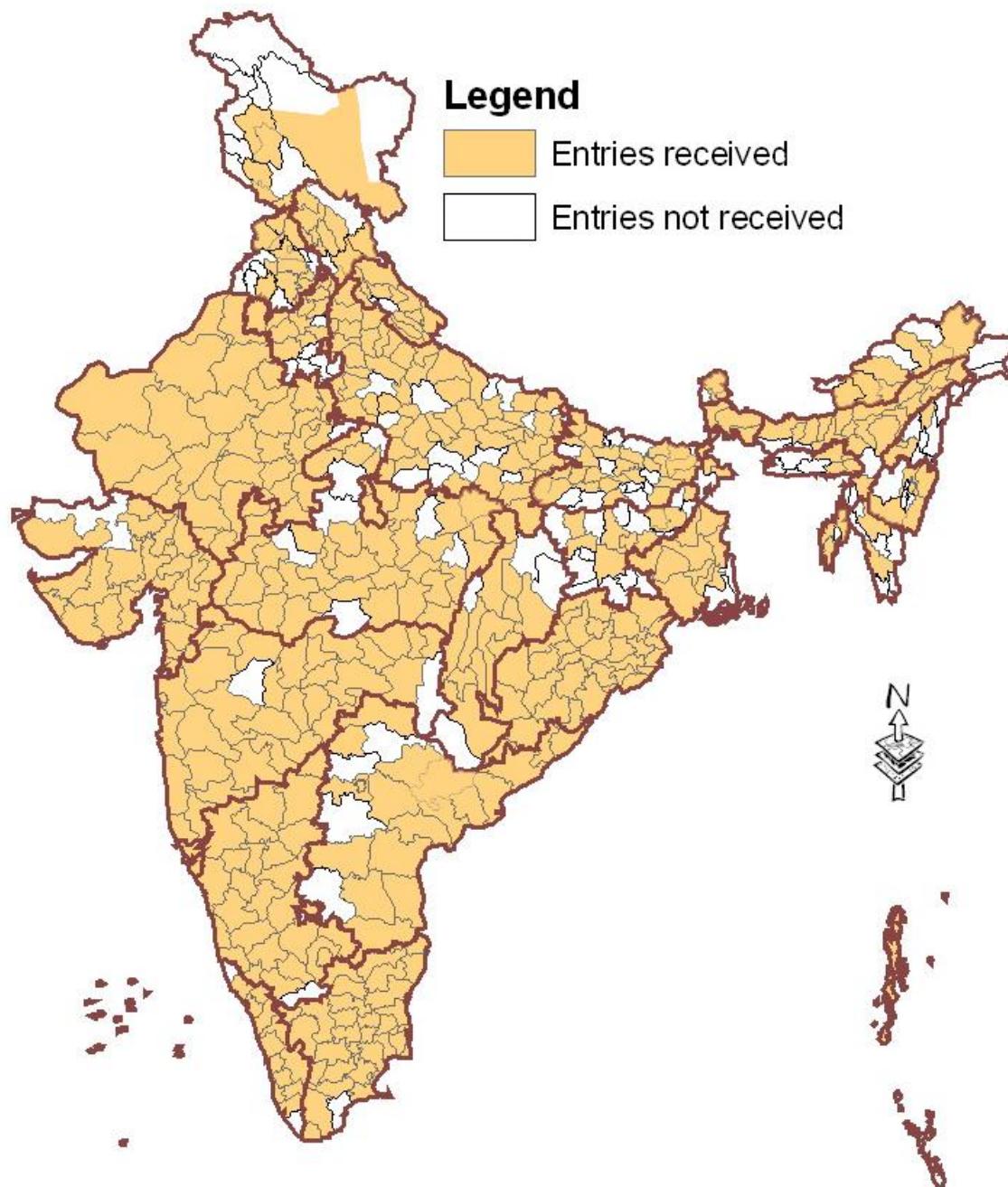
Functions



Current Status

- Scouted more than 200,000, ideas, innovations, traditional knowledge practices (Not all unique)
- 690 patents filed on behalf of innovators
- 550 projects supported for value addition
- 185 projects under Micro venture innovation fund
- Transferred 73 technologies to 85 licensees

Coverage of Districts by NIF (2000-2010) N= 545



g2G

grassroots to global

Global GIAN – Building a Global Value Chain for the Augmentation of Green Grassroots Innovations



Sales made internationally

1. Coconut tree climber- USA (Florida, Massachussets, California, Hawaii etc.) Australia, Maldives, Sri Lanka, Brazil, Mexico, West Indies
2. Pomegranate deseeding machine - Turkey, USA
3. Garlic peeling machine - Pakistan
4. Areca nut husker - Singapore
5. Milking machine - Phillipines, **Uganda, Ethiopia**
6. Resin grading machine - Peru
7. Cassava peeling machine - **Kenya**
8. Herbal growth promoters - Ghana



Product queries:		
S1 no.	Innovation/product	Countires
1	Coconut/palm tree climbing device	USA, United Kingdom, Vietnam, Australia, Sri Lanka, Mexico, Iran, West Indies
2	Entech oil expeller	USA, United Kingdom, Australia, Phillipines, Canada, Kenya, Colombia, S. Africa, Switzerland, Poland, Indonesia, Belgium
3	Garlic peeling machine	Slovenia, USA, Turkey, Peru, Singapore, Iran , Venezuela, Pakistan
4	Pomegranate deseeding machine	USA, Australia, Turkey, Venezuela, Hongkong, Israel, Netherlands, Thailand, UAE, Iran, United Kingdom
5	Cassava peeling machine	Congo, USA, Benin, Nigeria, Kenya, UAE, Uganda
6	Aaruni tilting cart	Uganda
7	Coconut defibring machine	China
8	Coconut dehusker	Mexico, New Zealand, USA, Philippines, Bangladesh
9	Lemon cutting machine	S. Africa
10	Milking machine	Bangladesh, Uganda, Ecuador
11	Palm leaf mat weaving machine	Fiji
12	Rain Gun (Chandraprabha)	Sudan
13	Tea making machine	Bangladesh,
14	Tile making machine	Bangladesh, Kenya, Rwanda, Ghana, Zambia
15	Trench digging machine	Pakistan
16	Zero head water turbine	Egypt
17	Arecanut dehusking machine	Chile



Welcome

Look at no less than masterpieces

The header image above is composed of three masterpieces-The image to the extreme left is just a canvas or a ploy to arrest the onlooker carved by Smt.Bhabhi Mahato, Village Puruliya, 20th Shodhyatra conducted by SRISTI in West Bengal. The central image is a 3 dimensional design carved by a woman in Bhagpat,18th Shodhyatra, Western UttarPradesh.

[Read more](#)

Artist of the week

Name of the craftsman- UnniKrishna Pakaanar

Name of the organization- The Creator

Address- Folklore and contemporary concepts, Kottanellur P.O.; Thrissur district,Kerala-680672

Contact- +91-9495 637 737 , 9048529921

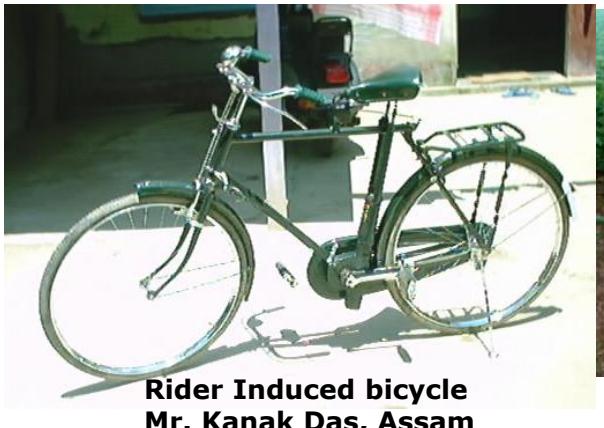
Email-



This group of artists make crafts using bamboo. They made all the musical instruments with bamboo. The creator says "Music has its origin from nature. The mother earth fosters. We imitate. But now the art and culture stand against surroundings. Hence we have to develop art forms which are eco-friendly. Folk art did this purpose. So too "MULA PAADUM RAVU"(Indian folklore fusion). The Bamboo music, most of the instruments are not bio-degradable. But ours are environment friendly. Bamboo and reed influence micro climate. They and their products; are shade, shelter and feeder. We give training in Bamboo crafts and also promote their sales."

Culturally Alive India
www.sristi.org/cultural

Bicycle based Innovations



Rider Induced bicycle
Mr. Kanak Das, Assam



Bicycle based sprayer
Mr. Mansukhbhai Jagani, Gujarat



Amphibious Bicycle
Mohd. Saidullah, Bihar



Bamboo bicycle
Mr. Dodhi Pathak, Assam



Bicycle with gear
Mr. Jayanti J Patel, Gujarat



Bicycle based mobile spray pump
Subhas Vasantrao Jagtap, Maharashtra



Multipurpose Bicycle
Md. Kamruddin, Rajasthan



Bicycle operated pump
Mr. Vikram Rathore, AP



Bicycle based portable Pump
Mr. Nasiruddin Gayen, WB

Emerging Models of Innovation

- a) Building upon what disadvantaged people are rich in: *inability to live with problems unsolved – overcoming inertia*
- b) **Empathetic** innovation: *samvedana se srijansheelta, kho kho model of innovation (innovation relay)*
- c) Going beyond **long tail, long nose** of innovation to **turbulent** innovation

Emerging Models of Innovation

- d) Inverted model of innovations: children invent, engineers fabricate, and companies commercialize
- e) Pooling of distributed ideas for innovation and experimentation : uncommon from common
- f) distributed mind management: www.techpedia.in - transcending the limits of frugality
- g) Moving blackboards: learning from unexpected quarters

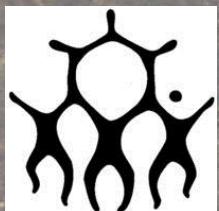


Minds on the
margin are
not marginal
minds

shall we join hands in learning from grassroots green innovators

fortune really lies at the **Top** of the innovation,
ethical, and value pyramid

thus, poor people are not at the bottom of all pyramids



anil k gupta
National Innovation Foundation, SRISTI, honey bee network, IIMA
www.sristi.org/anilg
www.nifindia.org

How did it happen:

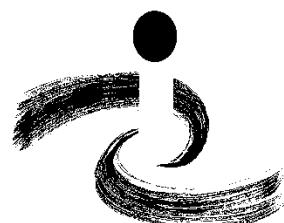


The Honey Bee Network, an informal global social movement, started in 1987-88,



SOCIETY FOR RESEARCH AND INITIATIVES FOR SUSTAINABLE TECHNOLOGIES AND INSTITUTIONS
(www.SRISTI.org) info@sristi.org

gian



GRASSROOTS INNOVATION AUGMENTATION NETWORK (www.GIAN.org)

NATIONAL INNOVATION FOUNDATION
(www.NIFindia.org) info@nifindia.org

anilg@sristi.org

The journey.....



Creativity counts
Knowledge matters
Innovations transform

Incentives inspire

(not just individual, but also collective, not just material, but also non-material)

Join the Honey Bee Network!
For rewarding indigenous creativity and innovation
www.techpedia.in, www.sristi.org, www.nif.org.in
anilgb@gmail.com