



# Minds at the margins are not marginal minds

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Honey Bee Network

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Innovations are everywhere



Improved variety of carrot  
(Laxmangarh Selection)  
Santosh Pachar



Date Thinning Tool  
Narendrabhai Kasundra



Don't wait,  
seek  
innovations

*learning to unlearn*

## Shodhyatra

A journey on foot is organised for one week to ten days twice  
a year during extreme summer and winter.





Nasser Amin  
Tajrish bazar, Tehran



# Why do innovations by kids reach Honey bee Network in India: missing hunger for kids' creative ideas?

Sanaz Badpa. "I am from Iran. I am high school student....my idea is...."

This invention idea relates to medical device, which helps many groups of people and medicine students.

How this invention project helps people:

1: Old people: many old people can't read or they have a problem with foreign languages.

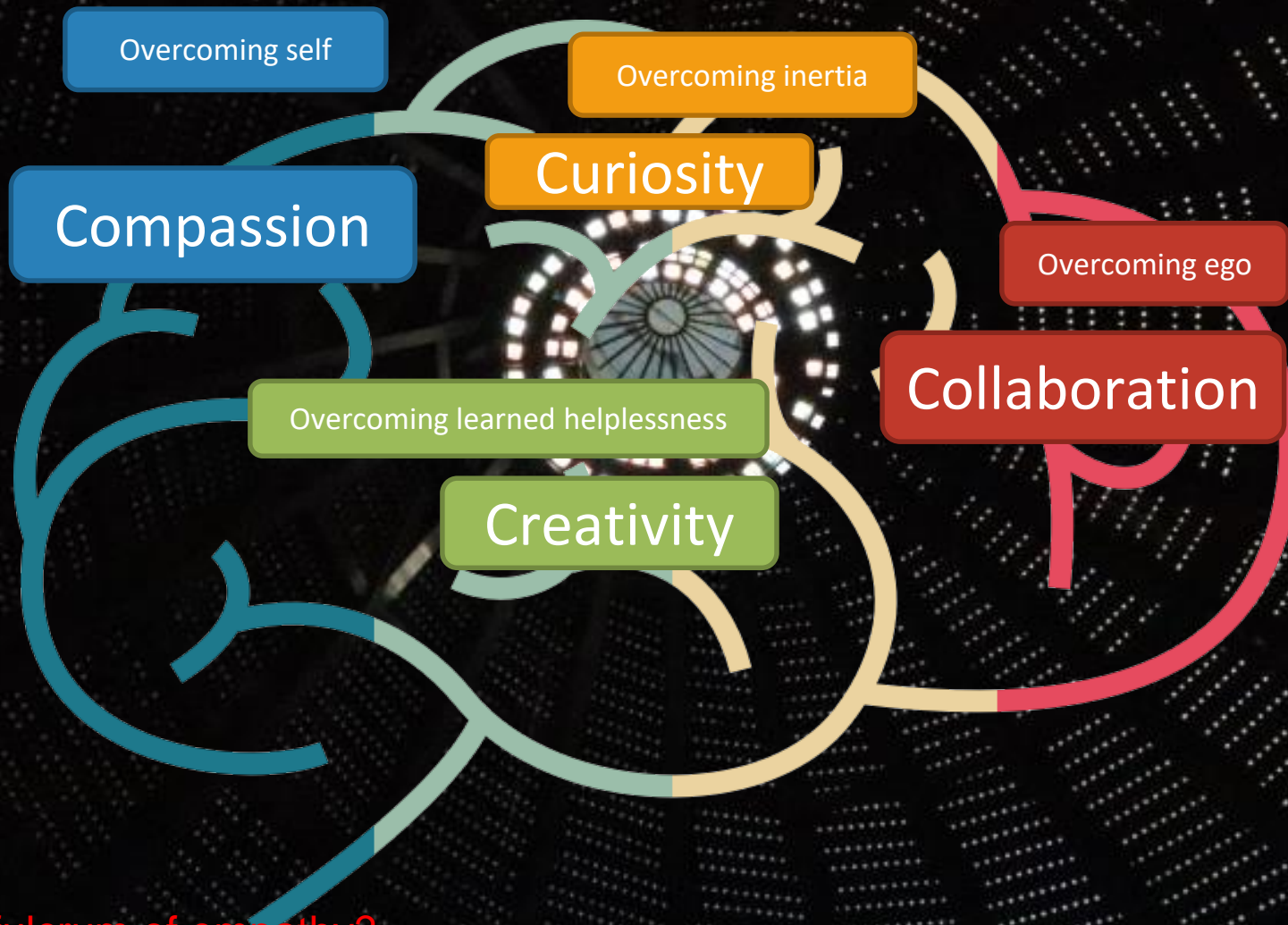
2: medical students: They can use this medical device to achieve advanced information about medicines and it will be useful for their university.

3: patients: It will be useful for patients more than other people, because they need to achieve information about drugs.

[www.sanazb14@gmail.com](mailto:www.sanazb14@gmail.com), October, 2016 annotation app for medicine which people may not fully understand from brand names



# Samvedana (empathy): driver of inclusive innovation



Ethical fulcrum of empathy?

Where are the fertile grounds for sprouting seeds of empathetic innovations?

# Grassroots Innovations are not Jugaad:

short-cuts or *jugaad* erode the will to **make durable sustainable innovations**



Shortcuts are futile.





Grassroots Innovations *are Not*  
Jugaad





Giving voice, visibility and velocity to creative and innovative people in formal and informal sector

## HONEY BEE NETWORK

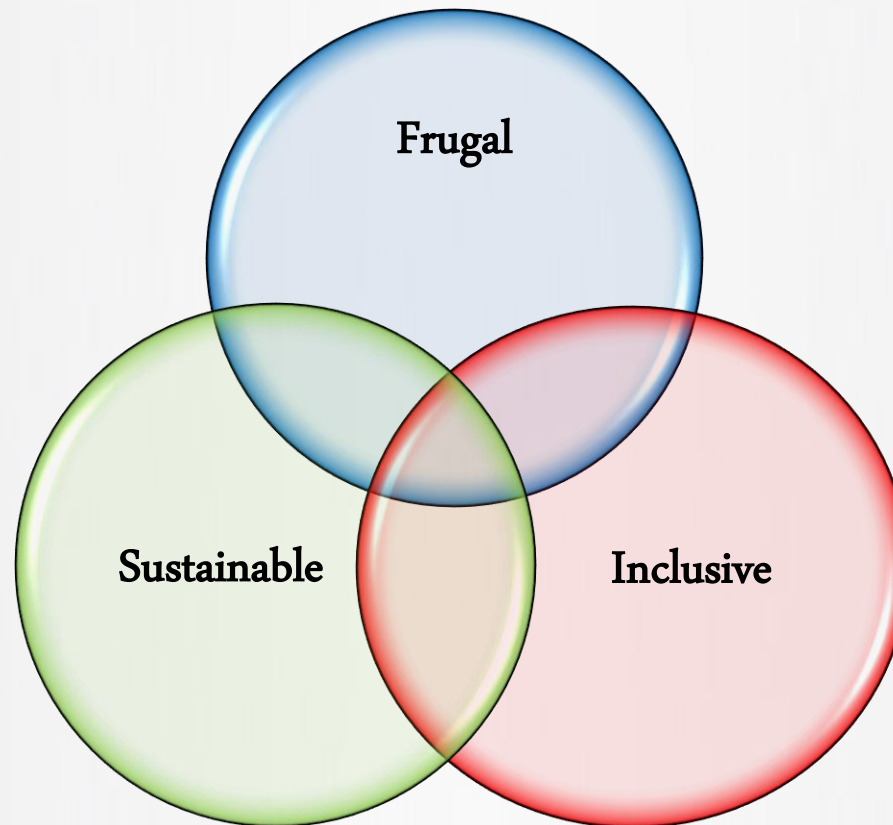
1987-1988



**LOOKING FOR THE ODD BALLS**

The Honey Bee Network (HBN) has been leading the grassroots innovation movement in India and abroad in the past three decades to strengthen the inclusive innovation ecosystem of the country but also has become a global benchmark of frugal, friendly and flexible solutions for men and women farmers, pastoral and artisan households, mechanics, forest dwellers, fishermen, etc.

# Innovations? What kind are we aiming for?





**4,000 YEARS LATER AND WE'RE BACK  
TO THE SAME LANGUAGE**



Simplicity and visuality :  
4000-40,000 years, Bhimbetka cave paintings



Frugality is not just for poor

Grassroots Innovations

Vs

Innovations For Grassroots





# Cotton Stripper Machine

## Problem

Seperation of lint in cotton crop ( Kalyan-V797, G13) is laborious process, manually carried out usually by women and children labour



## Solution

A unique solution to a tedious, manual process,  
Social relevance-reduces drudgery of women and child labour,  
Increasing efficiency & Quality of output by eliminating staple cutting,  
Wider socio-commercial application



Innovator: Shri Mansukhbhai  
Patel

# Miniaturized Fluorescence Adapter For Fluorescence Sputum Smear Microscopy Using Bright-field Microscope



- The bright-field sputum smear microscopy (SSM) is the most common method used for TB diagnosis in India, however SSM has poor sensitivity. WHO has recommended LED-Fluorescence Microscopy with higher sensitivity for TB diagnosis in high TB burden countries like India. The adoption of LED-FM has been slow mainly due to high cost (approximately ~2 lakhs INR after subsidy), additional infrastructure, training and maintenance of new fluorescence microscope.
- A unique fluorescence microscopy technology, cTIRF: compact Total Internal Reflection Fluorescence”. The cTIRF converts a simple brightfield microscope to fluorescence microscope without any hassle of tedious illumination mechanism, optical filters, and additional lens installation. This 3D-printed module is highly compact (~approx size of calculator), robust, cost effective and allows rapid (lesser than 2mins) TB diagnosis without additional infrastructure, cost and training.

• **Innovator** : Vikas Pandey

• **Team Members** : Pooja Singh, Saumya Singh, Nasreen Z Ehtesham, Seyed E Hasnain, Ravikrishnan Elangovan, Vikas Pandey

• **Guide Name** : Dr. Ravikrishnan Elangovan

• **University** : Indian Institutes of Technology Delhi

• **Submission Year** : 2018



# Rightbiotic : The fastest antibiotic finder

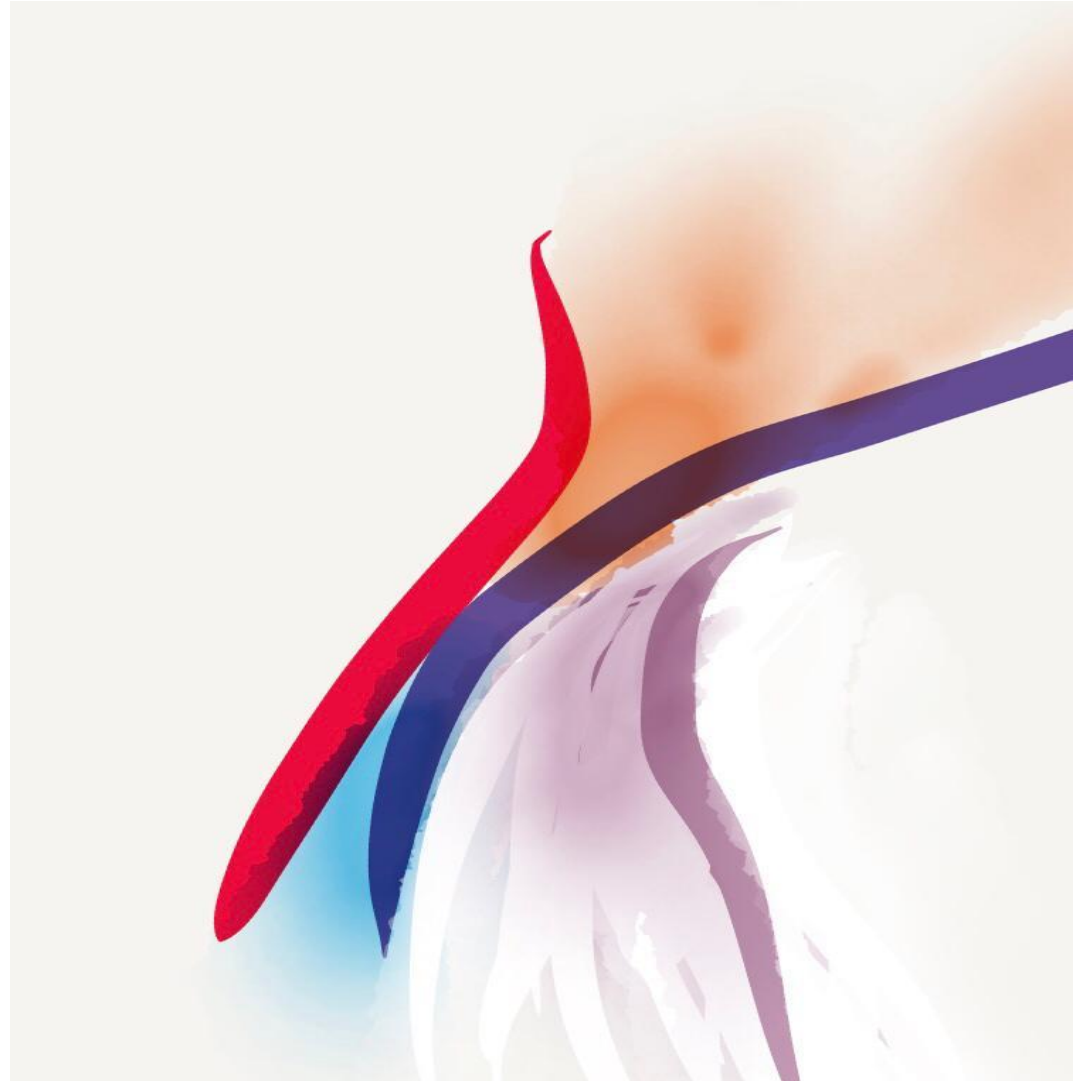
Shivani Gupta, DV Padmavathi,  
Anuradha Pal  
BITS Pilani, Hyderabad Campus  
Guide Prof. Suman Kapoor



In an effort to curb the threat that Urinary tract infections (UTIs) pose worldwide, innovator Shivani has invented 'RightBiotic' - an ultra-rapid test for determining the antibiotic sensitivity of bacterial pathogens found in human urine in the case of UTIs. The technology enables better and faster testing time, between 3 to 72 hours, for urine culture testing. Therefore, it ensures that the right antibiotic is administered from the very beginning of the treatment, and by extension, this prevents antimicrobial resistance. It uses the basic tenets of clinical microbiology including growing the bacteria in a specialized medium, and measuring the inhibition of the growth of bacteria in the presence of the antibiotic. The detection is based on chromogenic end-points that use optical sensors. Finally, the output is analyzed using lab-developed algorithm based softwares. Shivani believes that Rightbiotic will be a huge contribution towards the development of the healthcare industry in India, since it ensures quality diagnostic services for UTIs. Her aim is to make RightBiotic available in each and every Primary Healthcare Centre in India. She hopes that doctors would promote the idea of evidence based diagnostics, and avoid irrational/empirical use of antibiotics.

### Key lessons for learners:

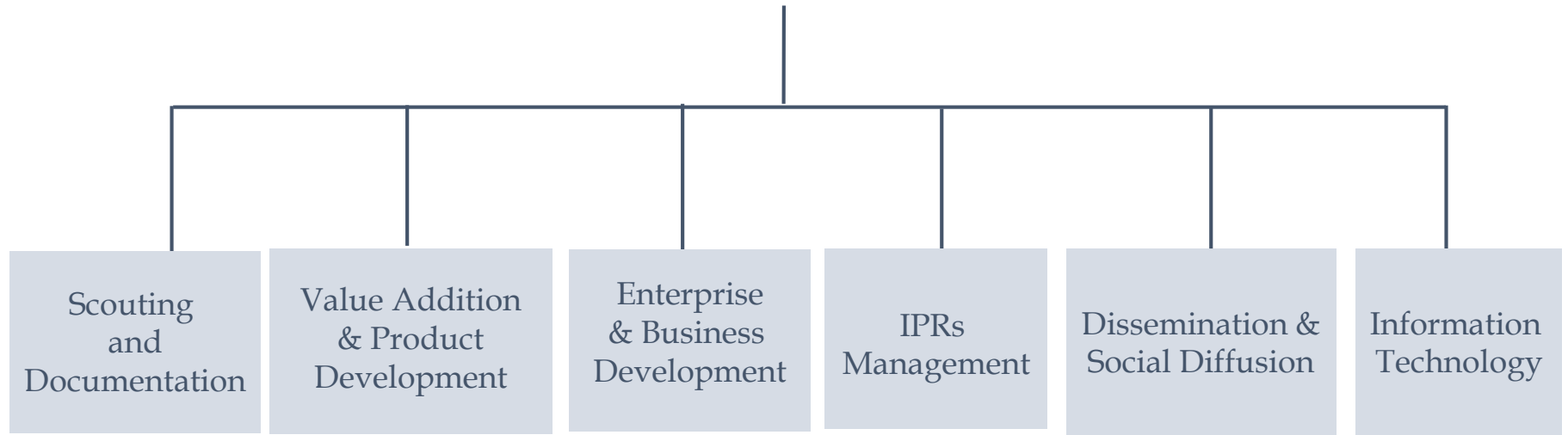
- a) Creativity is not uniformly distributed, even if it has potential to be so
- b) Not all creative ideas become innovations
- c) Not all innovations are desirable
- d) Unless we promote learning from external innovations, we don't value internal innovations either
- e) Recognizing, respecting and rewarding innovations creates a culture of creativity





# The HBN Institutions:SRISTI, GIAN, NIF

## Functions



Scouting  
and  
Documentation

Scouted more than 2,50,000, ideas, innovations, traditional knowledge practices (not all unique, not all distinct) For grassroots: techpedia has 200,000+ students engg. Projects, 3000+ polytech projects

Value Addition  
& Product  
Development

Over 1000 projects supported for validation/ value addition 37 Community workshops/ micro incubator support in 19 states

Enterprise  
& Business  
Development

193 projects supported under **Micro Venture Innovation Fund**

Transferred 89 technologies to licensees

IPRs  
Management

Dissemination &  
Social Diffusion

Filed >1050 patent applications in the name of innovators/ knowledge holders in India, 8 in USA, 27 under PCT (37 granted in India and 4 in US) 27 applications under PPV&FR Act 16 Trademark and 14 Design registration applications

Information  
Technology

## Setting up Grassroots Innovation Augmentation Network: Mapping and Tapping for existing innovations

- ❖ Innovators do not come to you, one has to **go and search for them**.
- ❖ The role of **volunteers and students** during vacations is paramount.
- ❖ Incorporation of innovations in **school and college curriculum** helps in triggering respect for grassroots innovators and also trigger their minds to solve their/societal problems.
- ❖ **In situ incubation**: providing support to innovators and entrepreneurs at their doorstep



Shodhyatra

learning from four teachers: from within peers, common people and Nature



# Policies for enabling ecosystem

■ **National public awards** play a great role in Legitimising the grassroots innovations. If these awards are given by the head of the state, they have a tremendous role model effect

■ **Public funding for the entire value chain** i.e. scouting , documentation, validation and value addition, IPR protection, risk funding, social and commercial dissemination, entrepreneurship development, licensing are essential for sustaining the movement

■ **Public recognition for civil society contribution** helps in mobilizing social and ethical capital of the grassroots innovation.

■ Transition from **micro finance to Micro Venture**

**Finance** is a fundamental policy shift



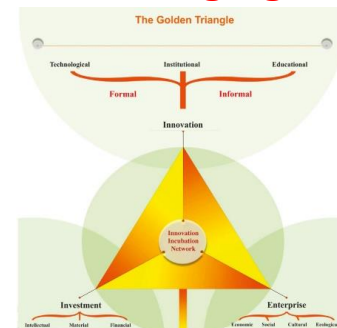
The Honey Bee Network

**Learning**



SRISTI

**Leveraging**



GIAN

**Linking**



NIF

**Legitimization**

# Towards Open Innovation

- To expand public domain, many grassroots innovations, even if IPR protected may need to be acquired through some compensation to the innovator for wider social application
- Protection of Intellectual Property Rights of individual innovators should not lead to disruption of the culture of open sharing and learning at community level
- The concept of technology commons can be leveraged to make grassroots innovations open source for local self employed people and licensable for commercial firms
- Pooling of innovations to generate to generate new robust solutions should be encouraged



**Automatic Mobile Groundnut Thresher  
Mr. Nileshbhai Dobariya**



**Tractor Operated Blowing Orchard Sprayer  
Mr. Rajendra Chhabulal Jadhav, Maharashtra**



# Circular economy innovations

- Fatigue factor
- Standards
- Certification
- Access to finance



A multipurpose farming machine for ploughing, spraying pesticides, **ridge making, weeding and interculture. One of three technologies transferred to Kenya with the help of USAID**

Without testing and validation, we can not decide to invest in value addition and thus **a fund to add value through a network** of designers, workshops, labs, colleges is needed to make inclusive innovations ready for social or market based diffusion.

Circular Economy: Testing norms and Fatigue factors

Each **public sector lab** should be **mandated to test** and give free reports to grassroots innovators and TK holders, or a national fund for the purpose be created to **compensate the labs**.

# Situating **traditional knowledge** in contemporary context

Traditional knowledge of one community may become an innovation for another community, with or without value addition

Steps in which innovation in traditional knowledge can be leverage

**All TK is not prior art**

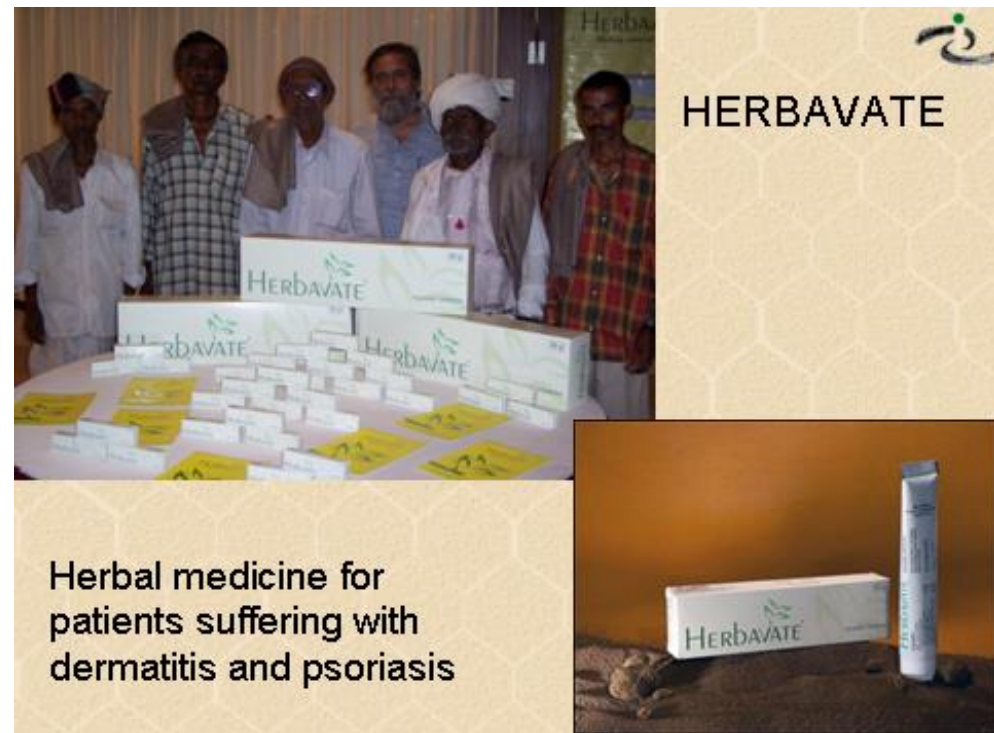
Prior informed consent is vital for maintaining ethical responsibility towards innovators as well as TK holders

Lab for validation, value addition and product development

Protecting IPR of communities and individuals

Licensing these technologies for creating common goods for the communities whose knowledge was licensed

Benefit sharing with not only community members but also nature for conservation



Based on the knowledge of seven innovators from six districts Sabarkanth, Panchmahal, Dang, Mahsana, Patan and Bhavnagar of Gujarat. Herbavate exhibits remarkable properties against eczema and variety of inflammatory and infectious skin conditions.



# Creating cultures that trigger



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



# THE GOLDEN TRIANGLE

Technological

Institutional

Educational

Formal

Informal

Innovation

KNOWLEDGE  
NETWORK

Investment

Enterprise

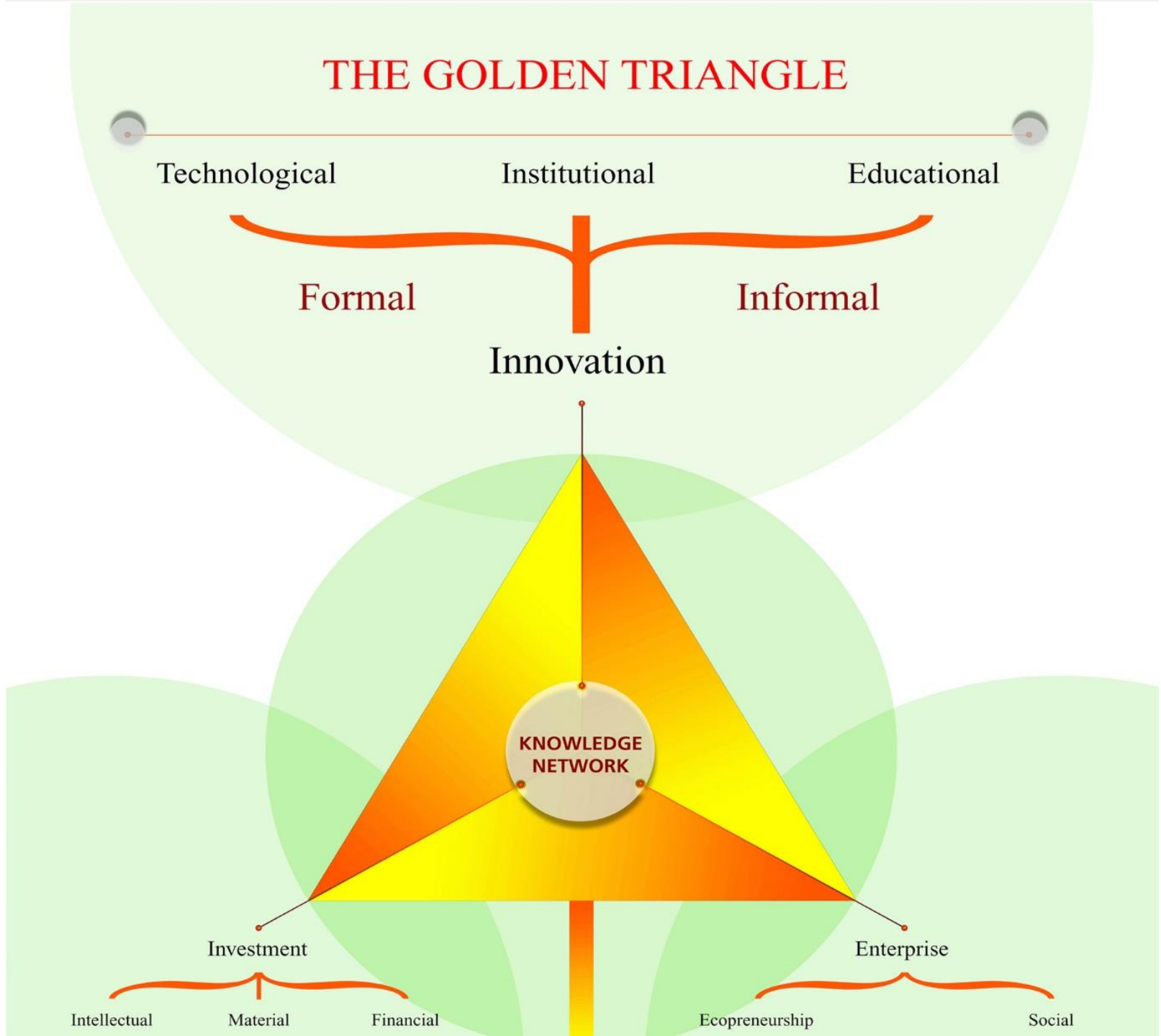
Intellectual

Material

Financial

Ecopreneurship

Social





Need for imperfect beginnings:  
at times, public policy is muddling  
through process

Let not the best become the enemy of  
better: incremental innovations matter



A change not monitored is a change not desired

gian

Submit your Ideas, Innovations, Prototypes



Honey Bee Network

Creativity & Inclusive Innovation Awards  
HBN CRIIA

Do you have any creative & Innovative Idea  
or Traditional Knowledge practice which  
solves day to day problems faced by us,  
animals or environment?

Email your entries to

[gian@gian.org](mailto:gian@gian.org) or post them to

GIAN, Bungalow no 1,

Satellite Complex, Nr. Mansi Crossroads,

Satellite, Ahmedabad 380015

Call us at 079 26769686

Selected ideas will be conferred  
HBN CRIIA Awards. Some will be  
given incubation support.



Motorcycle based ploughing machine.  
Mansukhbhai Jagani, Gujarat

October  
31, 2019

Last date

Inclined  
installation  
of water taps at  
schools and other  
public places so  
that students of all  
heights can drink  
water comfortably  
Chhaya Thakor,  
Gujarat





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 creativity and innovation  
[www.techpedia.in](http://www.techpedia.in), [www.sristi.org](http://www.sristi.org), [WWW.GIAN.org](http://WWW.GIAN.org),  
[www.nif.org.in](http://www.nif.org.in) [anamika@gian.org](mailto:anamika@gian.org), [gian@gian.org](mailto:gian@gian.org)