

UNAPCTT-CSIR workshop on Technology Commercialization and Transfer

1st November 2017

Welcoming you!



**Tiruchirappalli Regional Engineering College -
Science and Technology Entrepreneurs Park
Trichy - 620015**

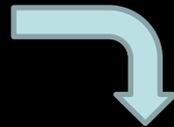


The Road taken, so far by Global Communities...

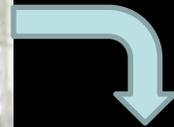
Savagery → **Barbarism** → **Slavery** → **Imperialism**

Democracy

Agricultural Economy



Industrial Economy



**Knowledge Based
Innovation Economy**



- Land
- Labour
- Natural Resources

- Capital
- Machinery
- Management

- Science & Technology
- Innovation
- Entrepreneurship

**Incubation -
Standing on the
Shoulders of the Giants**



**“Innovation is the vehicle for
entrepreneurship ...”**

Peter Drucker

**“It is not from the
benevolence of the
butcher, the
brewer, or the
baker that we
expect our dinner,
but from their
regard to their own
interest.”**

Adam Smith



The need for a Innovation & Knowledge driven Economy

**Creation of
Hi-tech
Industry & Business**

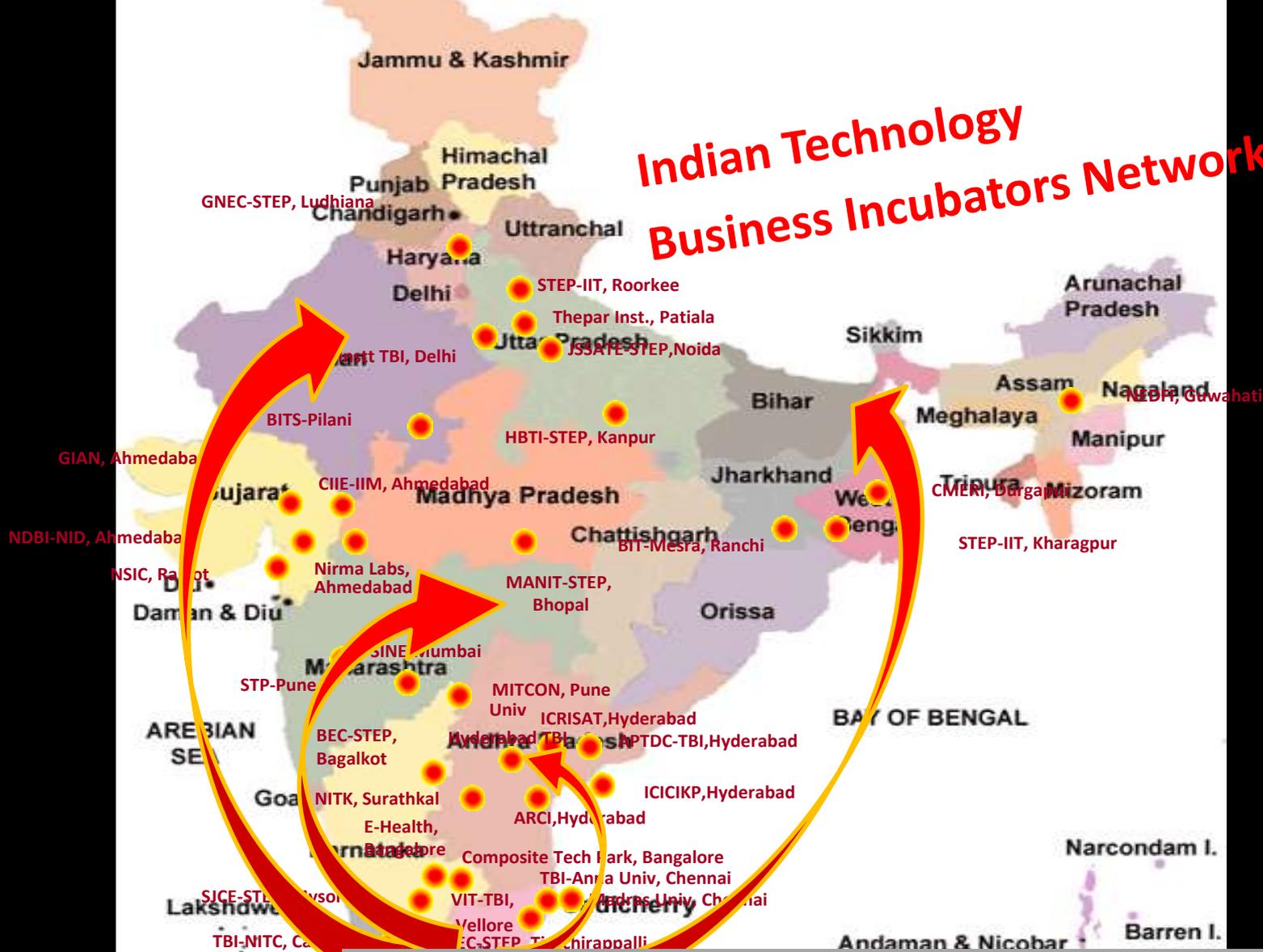
**Upgradation of
Traditional
Industry & Business**

**Nurturing
innovative
Human Resource**

Higher value addition for Labour

Quality of Life

Indian Technology Business Incubators Network



- Founder, Former President, Indian STEPs & TBIs Assn.
- Former Hon. President, Asian Association of Business Incubation
- Many other International responsibilities

Awards & Recognitions

TREC-STEP
National and
International
Awards - 8

Incubatees
National and
International
Awards - 20



AABI Incubator of the Year 2017
Award, Shanghai, Oct 2017



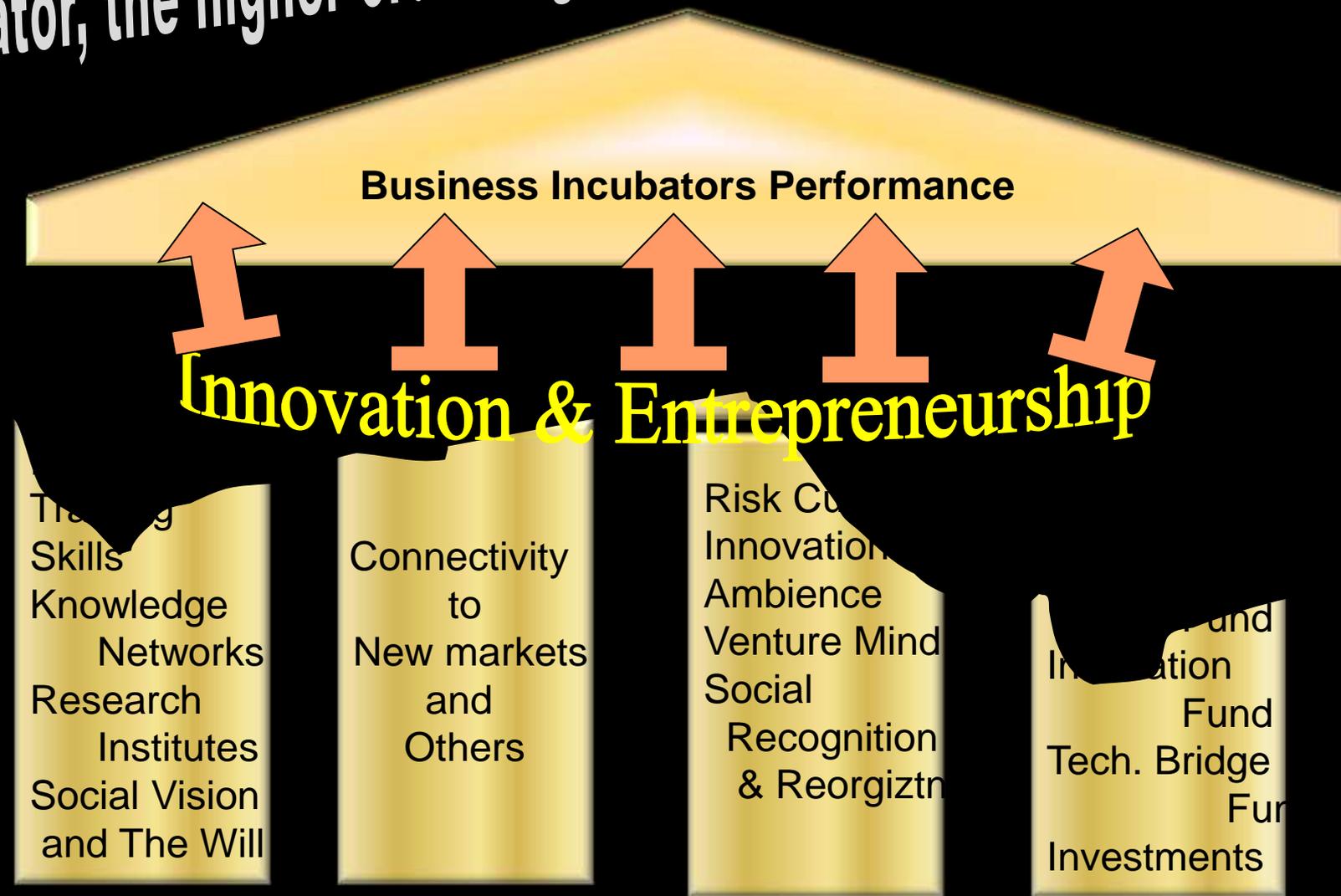
Smart Incubator of the Year 2016 from
SMART Grid Forum, PPP Initiative of
Min. of Power, GOI, Mar 2017



National Entrepreneurship Award 2016 from
Ministry of Skill and Entrepreneurship
Development, GOI, Jan 2017

International Cha

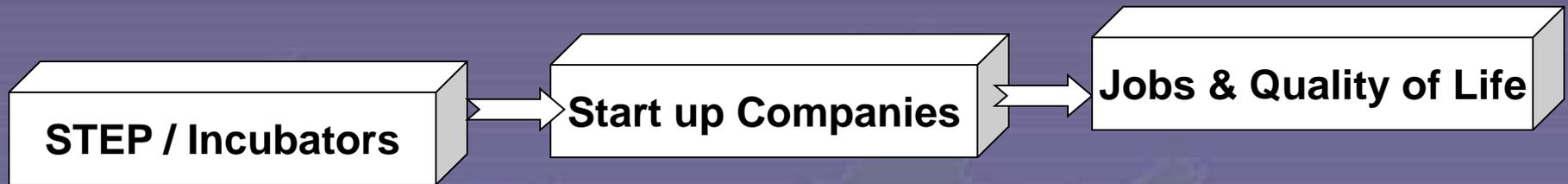
Incubator, the higher order organization : Logic Vs Magic



Business and Social Environment

Trec Step is a national development initiative for...

I. Promotion of Knowledge based ventures for creation of jobs



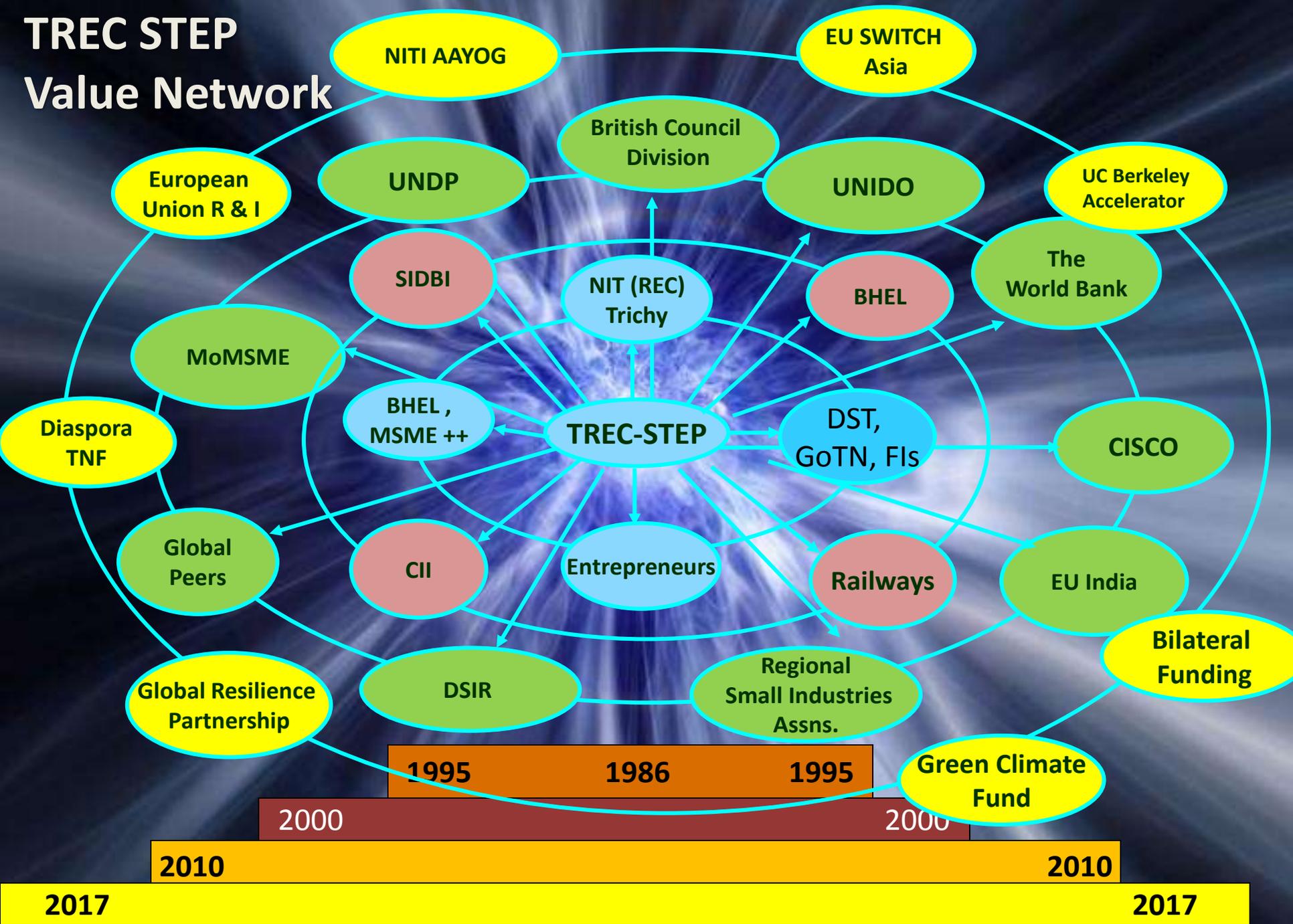
II. Technology based Innovation through shared Research & Development



III. Transfer of Knowledge - Training

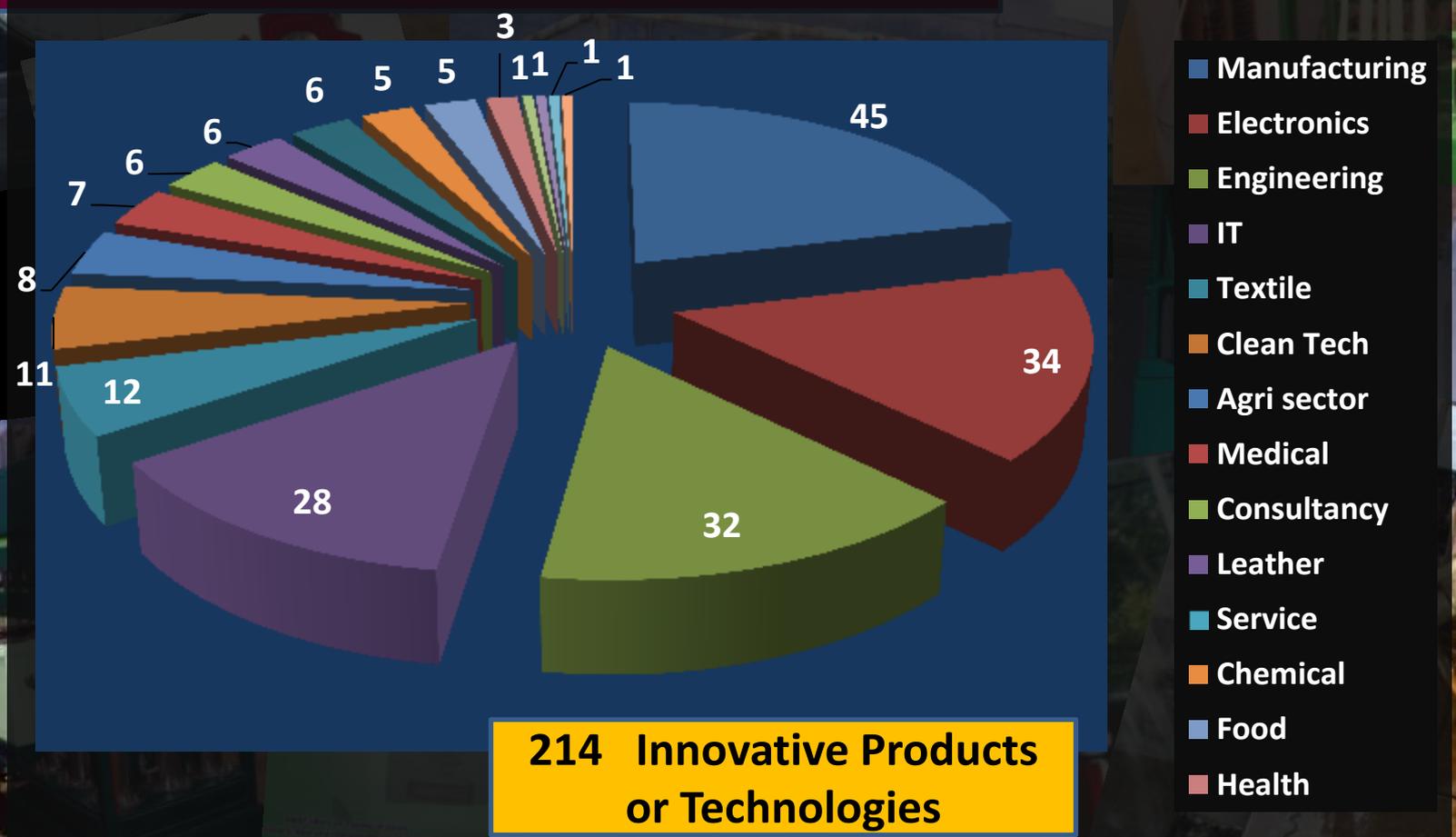


TREC STEP Value Network



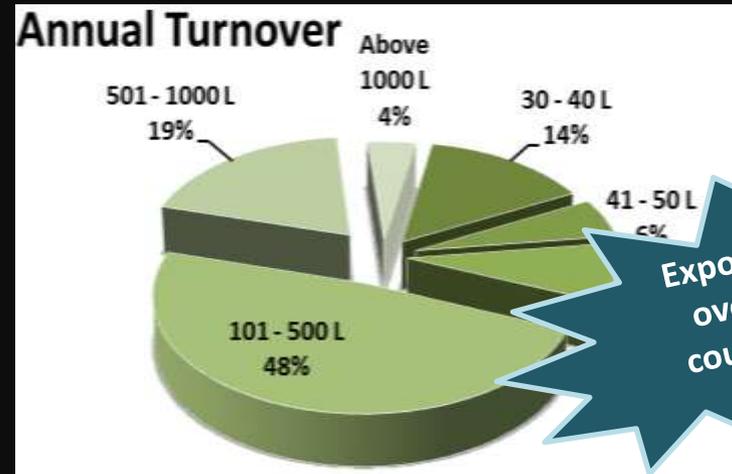
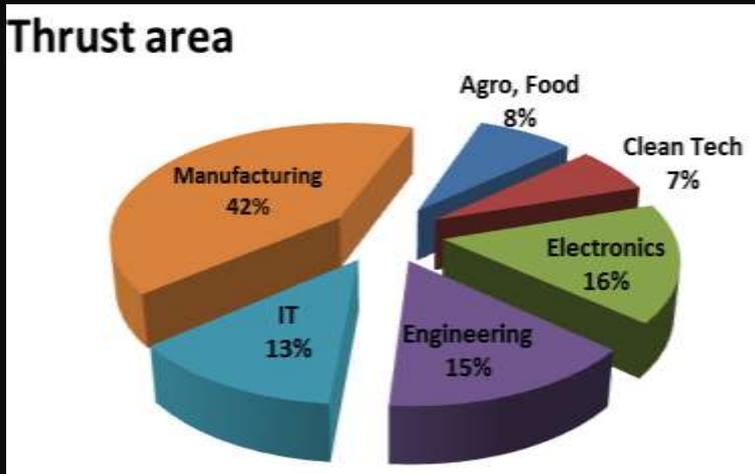
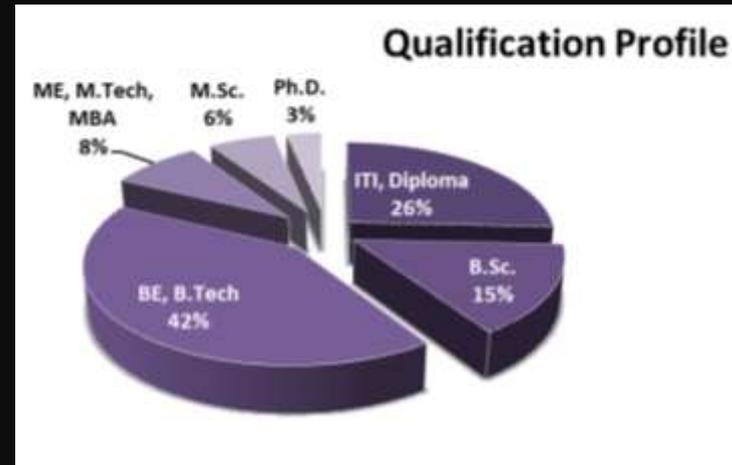
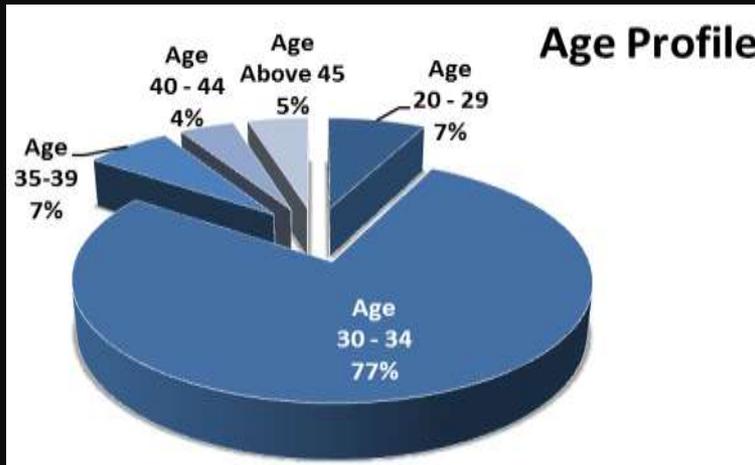
TREC-STEP Incubatees

Products developed and commercialized



- Manufacturing
- Electronics
- Engineering
- IT
- Textile
- Clean Tech
- Agri sector
- Medical
- Consultancy
- Leather
- Service
- Chemical
- Food
- Health

Profile of 214 Incubated Ventures



Exports to over 19 countries

Total Employment Generated: 3799 Jobs

Total Contributions to the Ex-chequer in last 3 years: INR 351 cro.

25 Patents filed

MISS
Most Impt.
Statistical
Significance.

Innovation :
New products / processes

Human Development

Regional Development

Investment

Jobs 300 per mln.

Community

Government
& Society

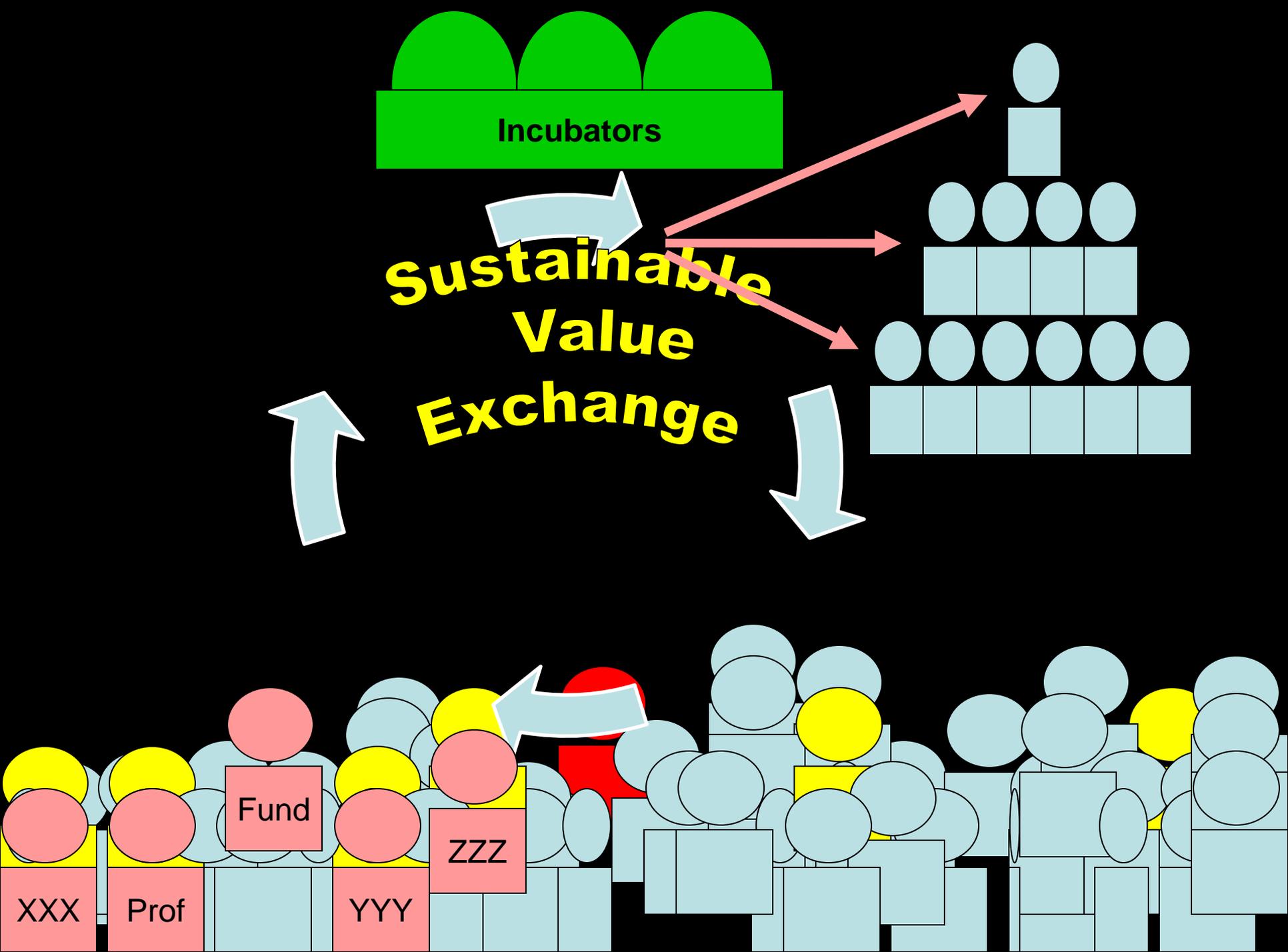
BI
Investment

After
5 to 7 years

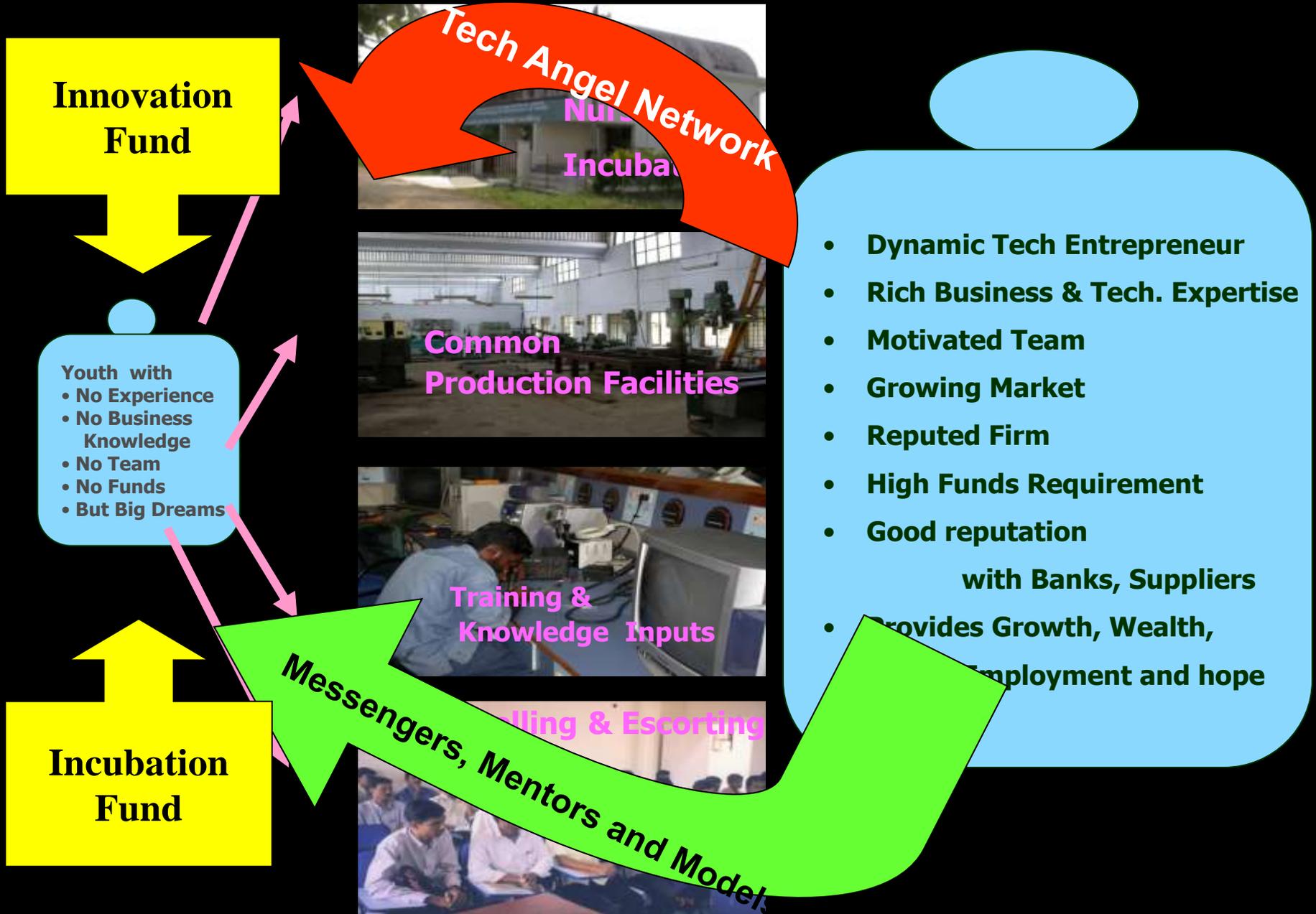
Tax Revenue to Governments (Profit, Turnover, Taxes)

Business Incubator,

The Rainbow Equation ...!



TREC-STEP's incubation intervention....



Incubation Service Packages

Strategic Planning Support

Funding Support

Knowledge Inputs

IPR emphasis & Patent Facilitation

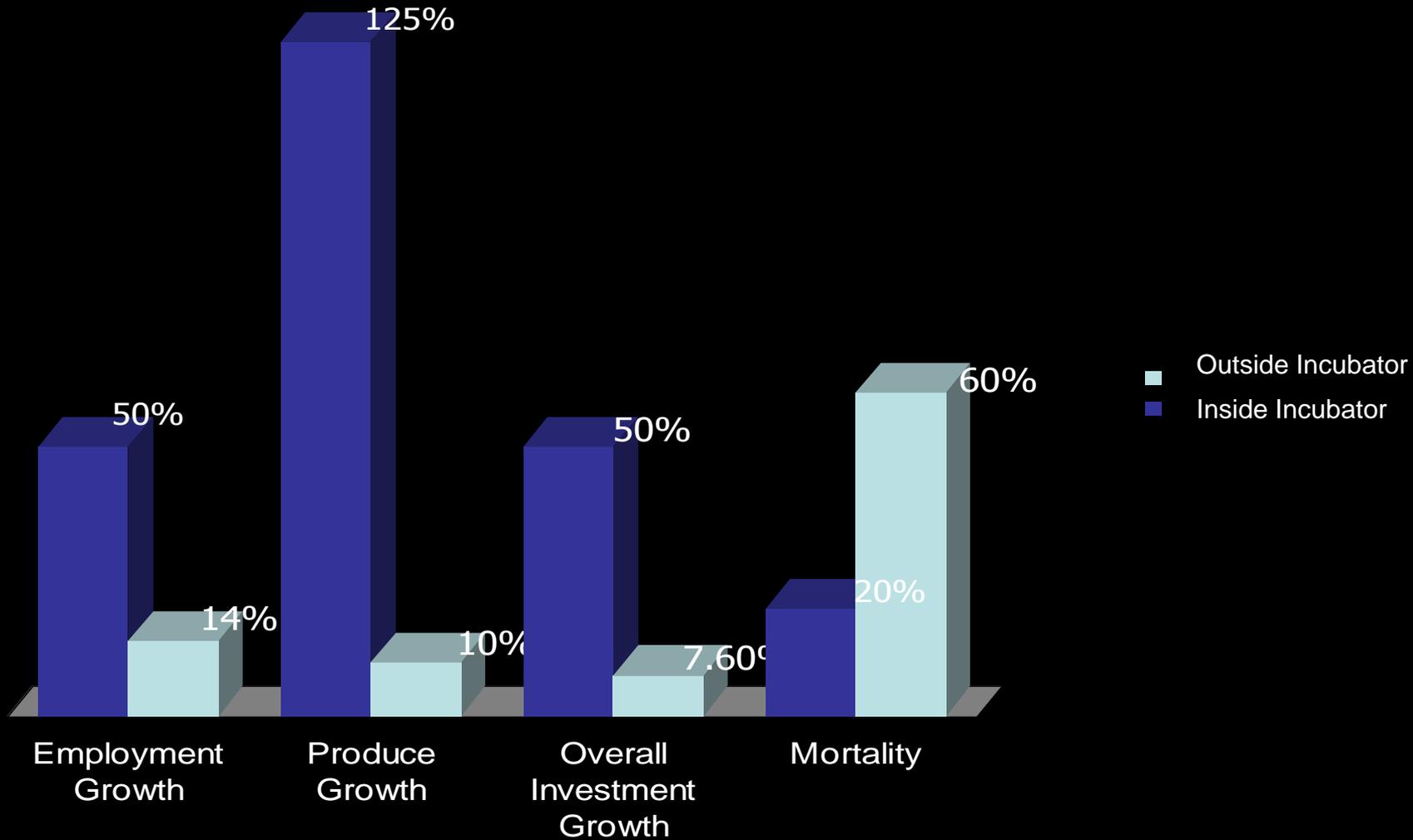
ICT support & International Linkages

Infrastructure Facilities

Common
Production Facilities

Nursery
Incubators

Growth Comparison



Now at Incubation!

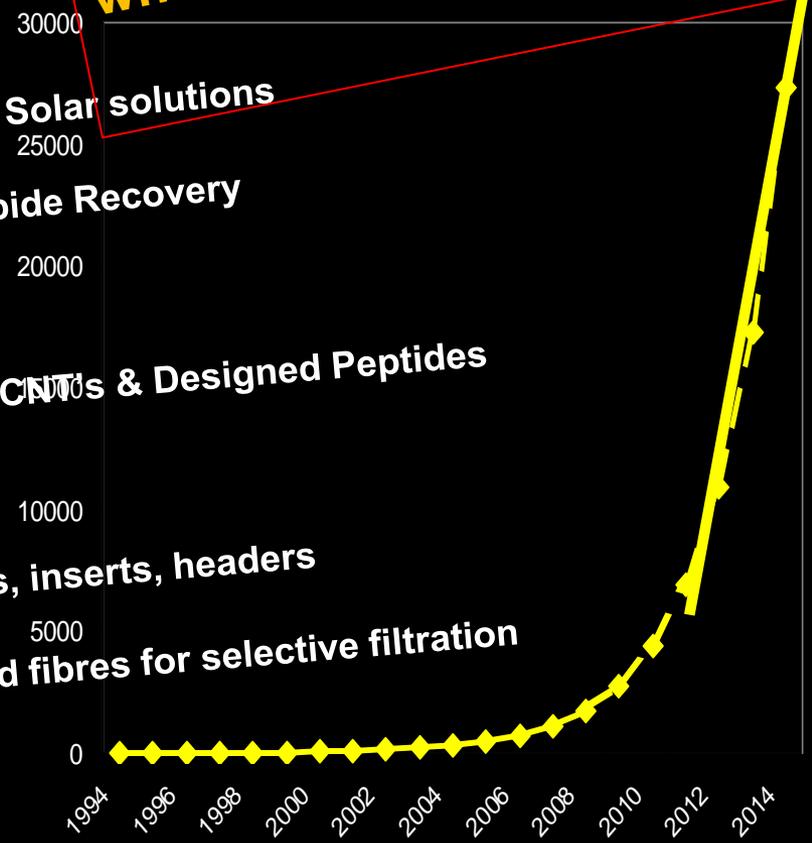
Ventures

1. Innova Automation
2. GloTech Organics
3. PureTech India
4. Karma Innovations
5. Contura Solar
6. Aeyyes Tungsten
7. Bharath Agro
8. Grey Matter Research Foundation
9. Biramha Industries
10. Galaxy Research Tech.

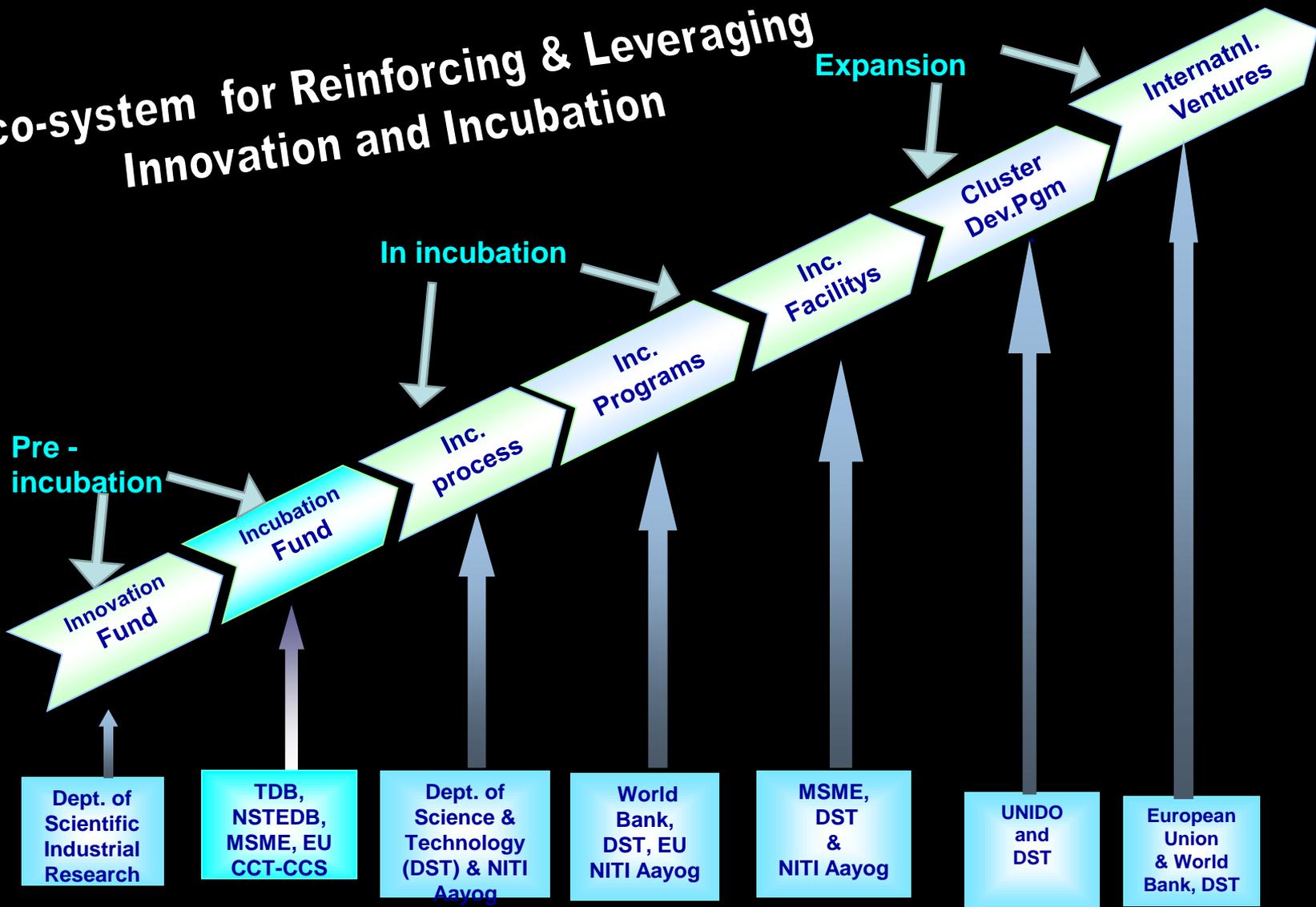
Domain Area

- Manuf. Solutions
- Bio Pesticides
- Clean Tech
- Digital X Rays
- Custom made Solar solutions
- Tungsten carbide Recovery
- Agro Energy
- synthesis of CNTs & Designed Peptides
- Split Cutters, inserts, headers
- Nano coated fibres for selective filtration

Incubators are not promoting small companies but Large Companies -
which happen to be small, now - Lalkaka

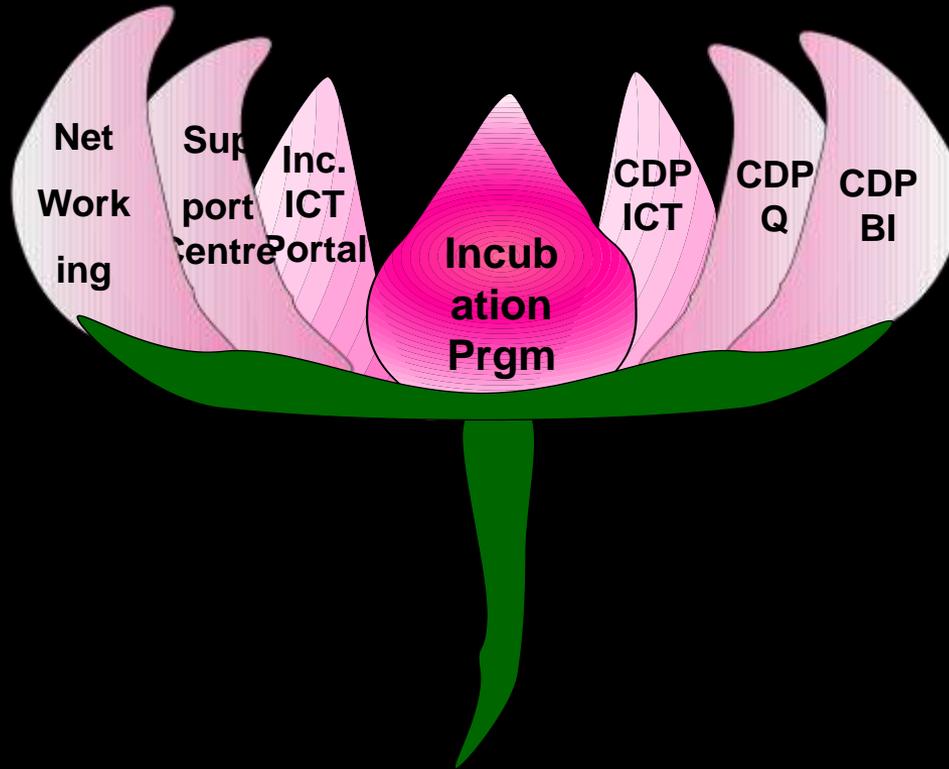


Eco-system for Reinforcing & Leveraging Innovation and Incubation



World Bank InfoDev Project :

'Developing ICT Synergies for leveraging performance of Start-ups'



TREC-STEP Business Incubation Eco System

Venture Incubation Package - an Auto Pilot Incubation System

Desktop Mentor for effective venture planning

Break Even
Simulator

Cash Flow
Simulator

Investment
Appraisal
Simulator

Spider
Diagram

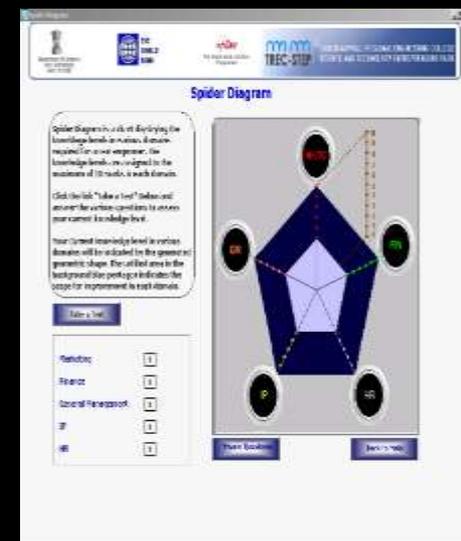
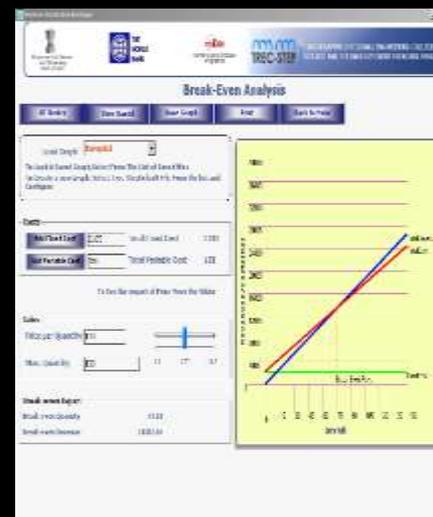
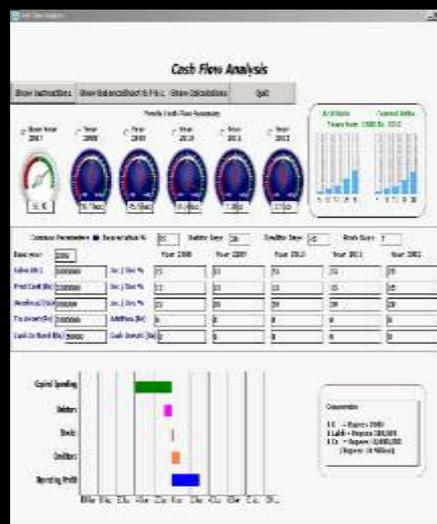
Web Based and Stand Alone ICT Tools

Venture Incubation Package

Venture Incubation Package is a core planning tool for technology vents, aiming for higher accelerated growth. It enables the entrepreneur with the cost and revenue projections of higher venture decisions through real time break even analysis, desktop cash flow predictors for smooth clearing of higher venture and investment, desktop tracking the spider chart in investment during accelerated growth.

It also maps the managerial knowledge requirements of the available venture for industry.

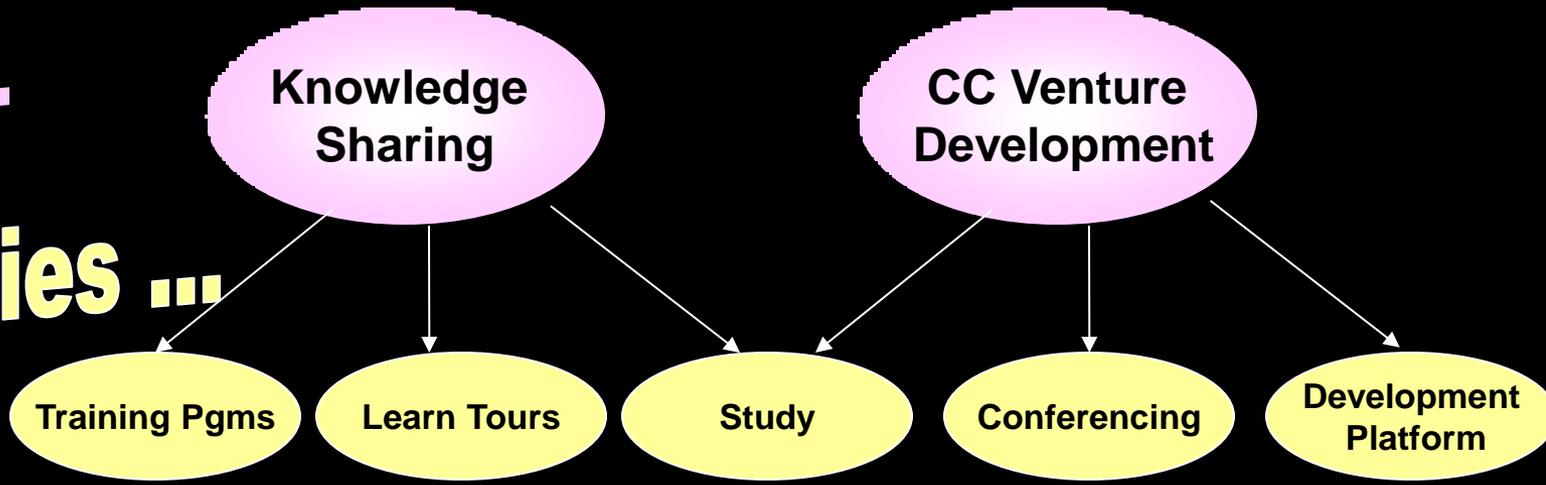
SCREENS
CASH FLOW
INVESTMENT APPRAISAL
SPIDER DIAGRAM
EXIT



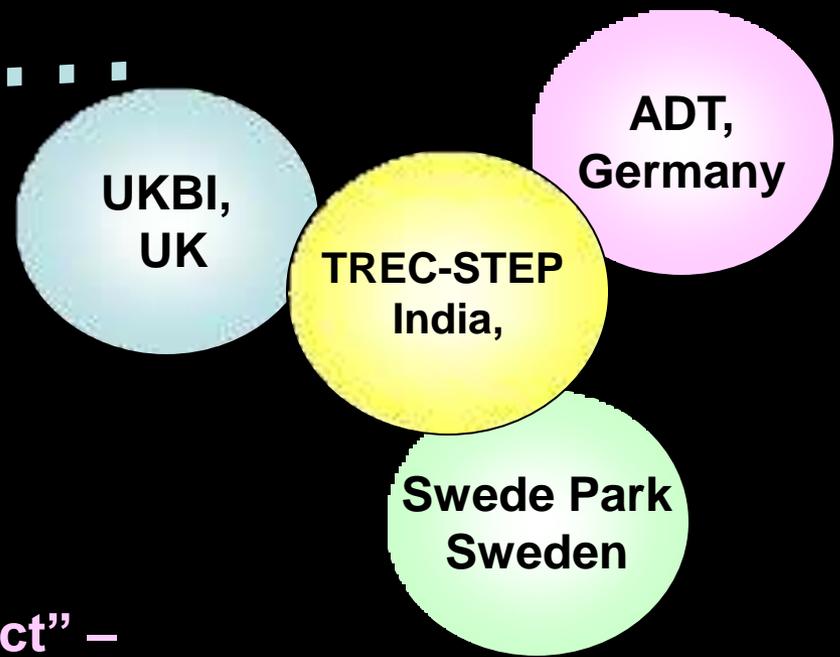
EU-India & DST Business Inc Networking Project 2005 - 06

Aims ...

Activities ...



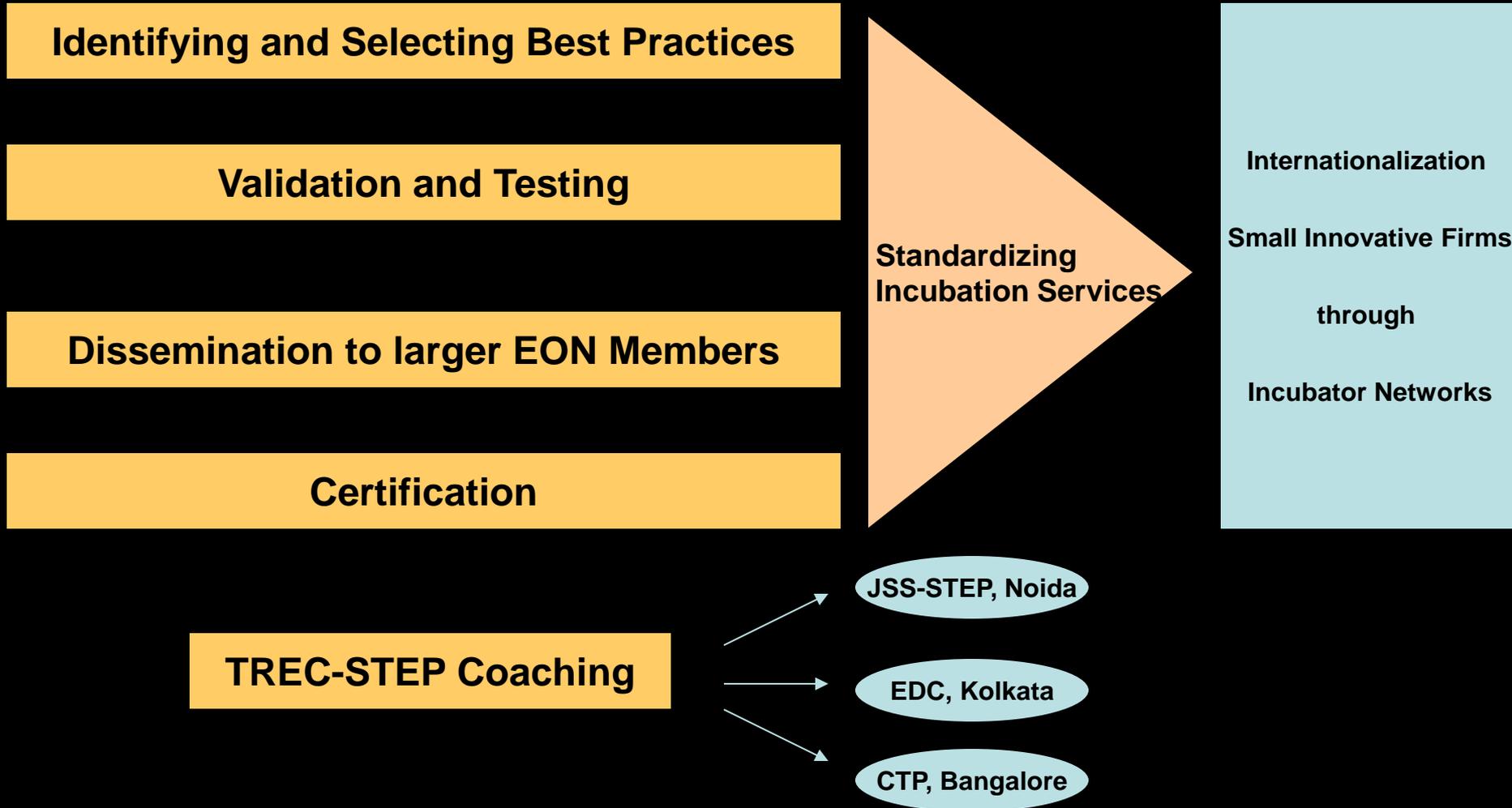
Partners ...



“Best example of a Good Project” – EC, New Delhi

Euro-Office Services:

Opening International Markets for Small Innovative Firms



World Bank Development Market Place

Mini Cold Storage Units Project : 2009-11

Selected as one of the 3 out of the 22 DM project worldwide for case study and potential for leverage

- Post harvest wastage in India - nearly \$6 billion

- Affects the earnings of > 10 million farmers

- 5386 cold storage facilities 13% of requirement

- Yawning gap between large CS & home

- Mini Cold Stores for small farmers

1. **Five Mini Cold Store Units specially designed for Farmers Market**

2. **Operational at Karur, Kumbakonam, Salem, Nellore &**

Nanganallur

3. **Trained and**

Entrepreneurs



Unemployed Youth





EUROPEAN UNION

Developing a Cluster for CCT and CCS Technologies for the Indian Thermal Power Sector

Partner: Bharat Heavy Electricals Limited

Implemented by: TREC-STEP

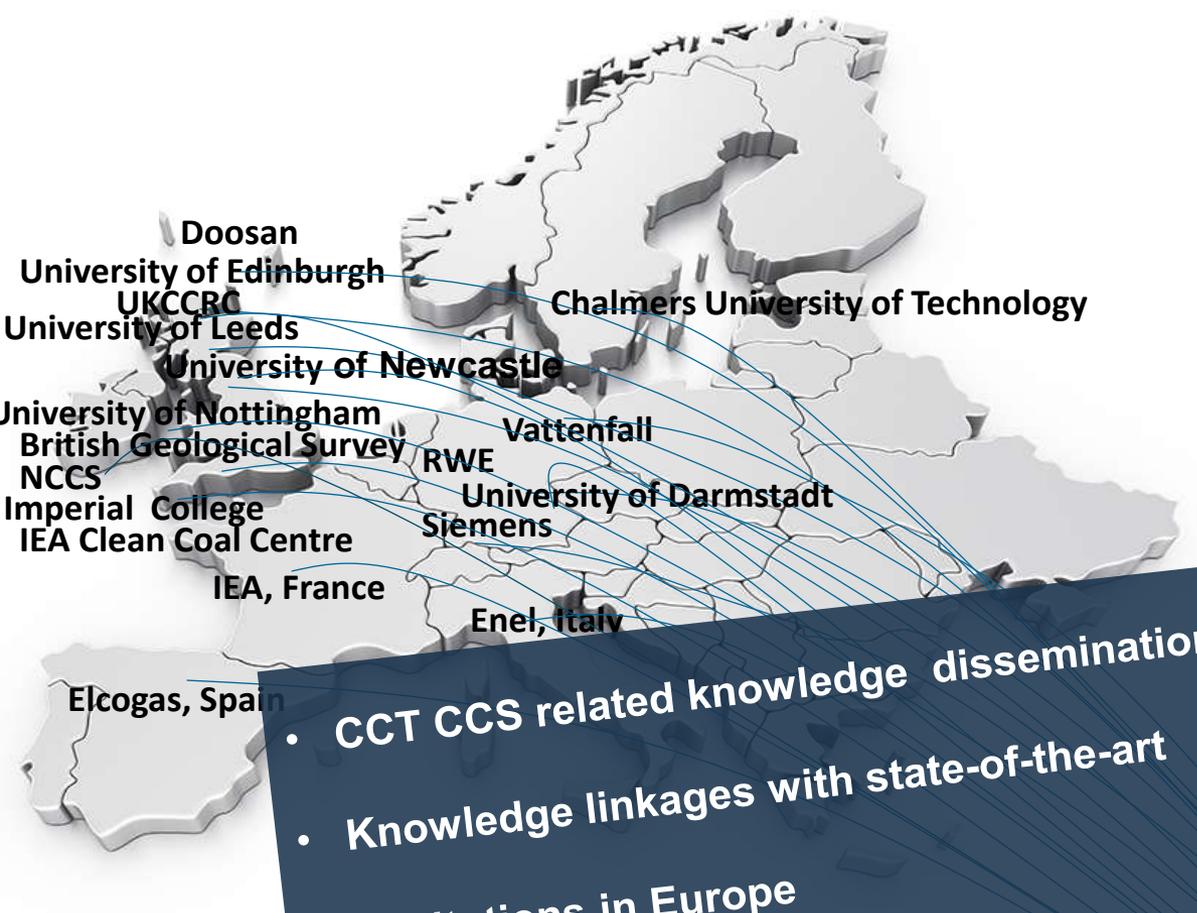
Thematic Area

‘Capacity building and studies’ on CCT - CCS in developing countries

Core Objectives

- Promotion of Cluster of CCT and CCS Technologies
- Enable increased awareness, capabilities & development actions

Enduring Knowledge Network in CCT and CCS



- CCT CCS related knowledge dissemination
- Knowledge linkages with state-of-the-art institutions in Europe
- Equipped a team of young engineers in CCT CCS Tech
- Two CCT CCS technologies demonstrated in BHEL
- Promoted start-ups in clean tech domain



CCT CCS Focused Knowledge Network

TREC-STEP's Agro Rural Venture Incubation Project



MoMSME's

A Scheme for Promotion of Innovation, Rural Industry & Entrepreneurship ASPIRE

- TREC-STEP situated at the 'Neck' of the Cauvery Delta.
- Climatic change, Farmer distress, is a major regional concern.
- New Technology inputs, is critical to boost Farm productivity.
- MSME ASPIRE Project is a timely opportunity for TREC-STEP for creating high impact by promotion of **Innovative, scalable Agro – Rural Technology Ventures creating wealth, jobs and livelihoods ++**
- 15 Ventures shortlisted

Activity spectrum, since February 2016

**ASPIRE Project Promotion @ with popular regional
AGRI Magazine (Pasumai Vikatan) Expo**

TREC-STEP created interest among Farmer community Expo visitors ,
490 Agri business ideas registered and later screened for relevance.



SMART Innovation Boot Camp 12th April 2016
28 Innovators attended the Camp, face to face interactions



Local Steering-cum-Expert Committee Meeting
Innovator Presentations and shortlisting of
15 innovative ideas on 4th August 2016



Value Networks and Partnership building

- Indian Inst. For Crop Processing Technology – Tanjavur
- Imayam Institute of Agriculture and Technology

Strengthening Common Incubation facilities

Advanced 3D Printer STRATASYS U Print SE Plus has been
procured from Hong Kong and installed
3 – D Printing Workshop for Innovators organized in June '16



53 Agro/Rural Innovations identified

ASPIRE Incubatee Selection Process

Agro – rural innovations mined from SMART Innovations Boot Camp and other Promotional initiatives undertaken

53

Potential Innovations shortlisted after systematic screening , face-to face meetings, etc. Invited to present before the LSE Committee

21

Selected by Local Screening cum Expert LSE Committee for Incubation

15

Innovative, high potential Ventures to be strengthened with Seed fund

5

1.Improved Moving Lever Hand Weeding - S. Duraisami	19. Fully Controlled Sowing Attachment in -Shankar Prabhakaran	37.Bio gas and Liquid Manure from Meat and Fish Waste -Satish Subramanian
2.Coconut Husk Expeller - Manoharan	20.Electronic Dustbin and Touchless Switch - Hariram Chandar	38.Laser Boring Fixtures for Natural Seed Jewellery- S. Balasubramani
3.Improved Sugar Cane Seed / Bud Cutter- A. Johny Desmir	21.Mini Oil Extraction Machine -R. Sivakumar	39.Automatic Air Releaser for Compressor in Bore wells - K. Gandhiraj
4.Coconut Deskinner for Shelf Life Enhancement - Manoharan	22.Tender Coconut Cutting Machine -	40.Universal High Calorific Value Bio Fuels -
5.Mineral Enhanced Water Filters for Mushroom & Poultry Yards - Dr.P. Rajini Kanth	23.Waterless Starch Extraction Sago Production Svsytem -Natarajan Ravar	41.Banana Fibre Rope Making Machine - Balakrishnan
6.Rotary Mini Expeller for Enhanced Oil Extraction -K. Kannan	24.Preservative and Carrier for Spores of Endopathogenic Fungi for Biological Controls - Dr. S. Anitha	42.Solar Dried Preserved Bananas
7.Organically Processed Tamarind Paste - C.Selvaraj	25.M. Lalitha	43.Banana Silk Yarn Separator - K. Murugan
8.Organically Processed Tamarind Paste - C.Selvaraj	26.Preservative and Carrier for Spores of Endopathogenic Fungi for Biological Controls - Dr. S. Anitha	44.Thermophilic Yoghurt Maker for Enriched Pro
9.Leads Harness for Lifting Heavy Loads -Veena Mittu	27.Onlin Pre-chiller for Fruits & Vegetables - Preethi and Shankaran	45.M...
10.Stone Removing Equipment for Farm Bed Preparation -	28.Low Cost Power from Bio-mass -S. Abdul Azis	46.Cold store for Value Addition of Milk and Curd - Shankaran Ramurthy
11.Stone Removing Equipment for Farm Bed Preparation -	29.Low Cost Power from Bio-mass -S. Abdul Azis	47...
12.Weed - Ajeet Sankar	30.Enhanced Bio Fertilizer - A. Amzani	48.Cleaning Products – Jaishree
13.Automated Irrigation Management Systems - Esaim	31.Enhanced Bio Fertilizer - A. Amzani	49.Farm Tec - Bio gas from farm waste - Chythenyen
14.Automated Irrigation Management Systems - Esaim	32.Low Cost Power from Bio-mass -S. Abdul Azis	50.Sprouted Millet Based Health Food Mixes - Mohan kumar
15.C...	33.Enhanced Bio Fertilizer - A. Amzani	51.Flavoured Moringa Powder to Combat Malnutrition - Amit Singh
16.Power Tiller based Turmeric Harvester - Jayaprakash	34.Enhanced Bio Fertilizer - A. Amzani	52.Sprouted Millet Based Health Food Mixes - Mohan kumar
17.Power Tiller based Turmeric Harvester - Jayaprakash	35.Cost Effective Treatment of Ground Water for Agriculture -G. Nisha	53.Flavoured Moringa Powder to Combat Malnutrition - Amit Singh
18.Herbal Enriched Fruit Drinks- I.Arun Amirtharaj	36.Recycling of Pesticide-ridden Water - Aravind Narayanan	

Business Planning Workshop, September 2016, Trichy

- To understand the Incubation requirements of Individual ventures
- Provide conceptual & practical insights in critical performance areas of venture development.



Business Concepts & Strategy



Marketing Strategy



Financial Management



Prototyping & Pilot Production

5 Shortlisted cases for MSME Seed support of Rs. 20 Lakhs each

Innovation 1: Soapnut based Organic Home Care & Cleaning Products



M. Jayasri



Project cost: 40 Lakhs

Usage of MSME Seed Fund : 20 L

Scaling-up Production Equipment : 12 Lakhs
 Intellectual Property protection : 1 Lakh
 Online marketing protocols : 2 Lakhs
 Part funding for Working Capital : 5 Lakhs

Financial Projections

	Year I	Year II	Year III	Year IV	Year V
Turnover	38	57	85.5	128.25	192.38
Expenses	39.3	50.98	66.75	97.9	143.59
Profit	-1.3	6.02	18.76	30.35	48.79

100 % NATURAL ALTERNATIVE for Chemical based Detergents

- Phosphates, Sulphates are the key chemicals in grey water causing Eutrophication (Algal Bloom) effect , killing aquatic life.
- Soap nuts contain Saponin, a good surfactant. Soap nut liquid detergent is NOT avbl. in India / Globally at a reasonable cost.
- Innovative Product is Skin & Eco friendly, Water usage reduced. Clothes last longer. Prov. Patent filed.
- “India Detergent Market Outlook, 2021”, states ‘Overall market for detergents growing with CAGR of 13.06% for last 5 years’, apprx. 16K Cr. (10 L Cr, globally)of which Mkt. share of Natural detergents is 15%. (1.5L Cr.)
- Online and POS Chains- ANSA Herbs
- Many trial orders - EU , Ukraine ++

Innovation 2: Kappa Carrageenan Gel Extraction from Sea Weed

Novel , indigenous method of Kappa Carrageenan Gel production

- Innovator, former Scientist, Biocon, R&D (Process Development and Pharmaceutical).
- Innovative technology for manufacture of pure kappa carrageenan from sea weed.
- Used as gelling, thickening & stabilizing agent in food, confectioneries, dairy, alternate for animal gelatin capsule.
- Low cost and better alternate for Agar, in tissue culture (INR 800/Kg versus INR 2500/Kg)
- As per Micromarketmonitor.com/market-report/carrageenan The projected export market value as on 2018 is USD 931.6 million (Rs 6055 Crore) at a CAGR of 13.4% until 2018. Currently Imported at higher cost from USA, Denmark (INR 600 v/s 450)
- Pilot Plant operational. Excellent feedback from Confectionery and edible Jelly manufacturers.
- SPIC Agro Biotech and Sun Glow Biotech Coimbatore, have placed pilot orders on the company for Carrageenan gel as Agar replacement.
- Farming sea weed is alternate livelihood for fisher folk.



Ajeet Sankar, ME



Project Cost :
45 Lakhs



Usage of MSME Seed Fund : 20 Lakhs

Scaling up of Production Equipment : 10L
Part funding of Working Capital : 10 L

Financial Projections

	Year I	Year II	Year III	Year IV	Year V
Turnover	104.16	124.99	156.24	195.30	244.13
Expenses	95.58	101.38	117.50	150.97	182.77
Profit	8.58	23.61	38.74	44.33	61.36

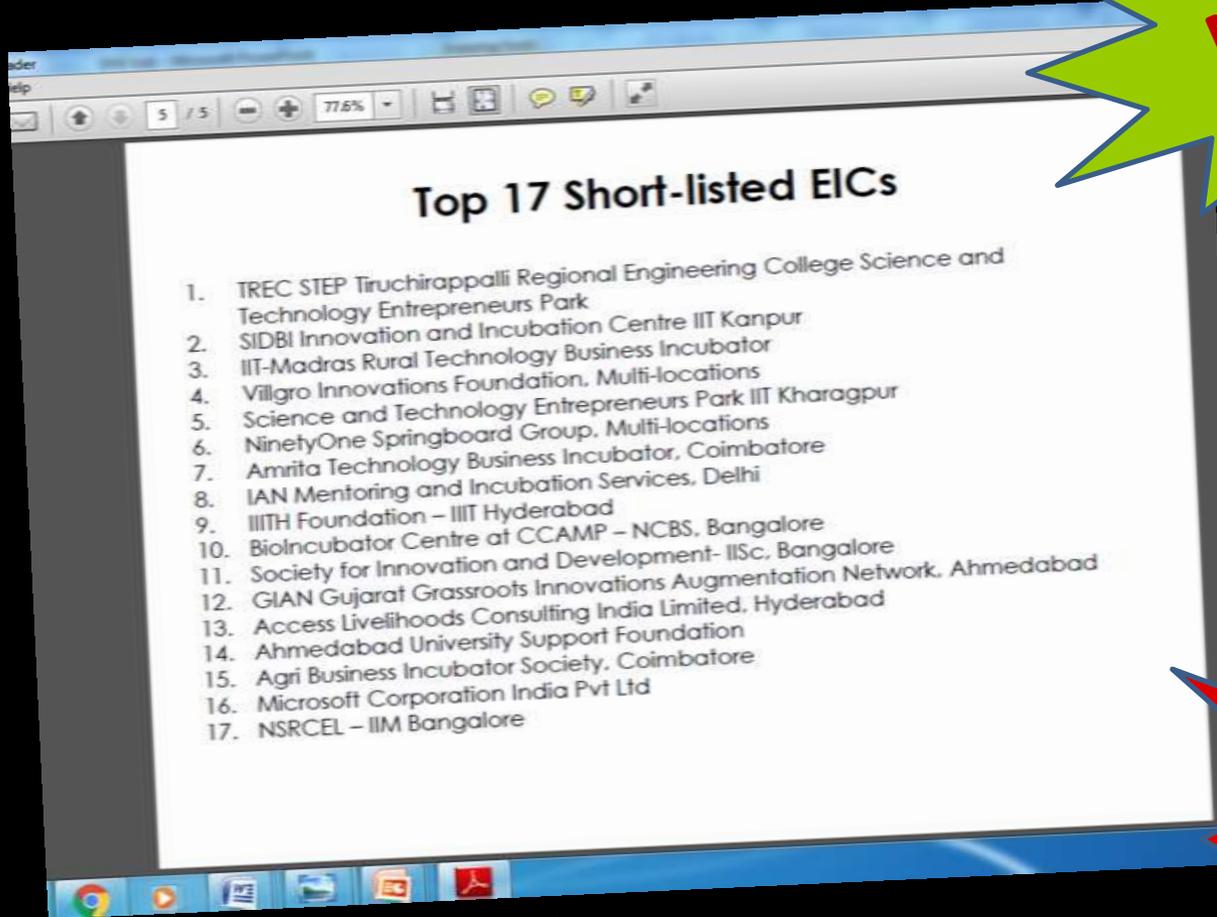
Silicon Valley Indian Entrepreneurs value adds in US

During May, 2000, Fortune Magazine reported

- The collective market value of the companies the Indians created in US is \$ 235 billion
- the GDP of India in 2000 is \$ 476.6 billion which is 49.30%

... hence creating similar conducive environment and eco-system in India for our youth are vital to realise that growth India

NITI Aayog - Atal Innovation Mission EIC scheme



No. 1 EIC
among
232 Entries

Selected as **No. 1**
among the **6**
selected
Incubators

Target: 80 Tech Ventures in 2 years
@ Trichy, Chennai

Strategies for Scaling-up BI Eco-System

- **US Diaspora Partnership**

- TNF Chennai, Indo US STF, TiE + +, Indo US Innovation Bridge US reach-outs, US NRI mentors

- **UC Berkeley Accelerator Programmes**

- **Hub-Spoke Model for new geography reach-outs**

- Satellite Inc. Centres in Academia & Research Institutes - (Atal Inc Centres !)

- **Skills and Cluster Synergies for MSME Incubation**

- Leverage with Clusters of UNIDO, other Ministries, EU, Corporates ++

- **Synergy with other Initiatives**

- BGS RC UK, GCF –UNDP, GEF Green Tech Funds, EU R&I etc etc

TREC-STEP -UC Berkeley Hypershift Accelerator Programme

Aims to promote a vibrant Innovation Accelerator, by bringing in proven UC Berkeley's Accelerator Methodologies & Processes and TREC-STEP Incubation expertise & support systems for unleashing the latent innovation potential of our youth, generating economic growth, job and wealth for the region.

Back end Supports

- Technology and guidance support
- Prototyping
- Manufacturing facilities
- Networking for R & D
- Co-working Space
- Training & management support
- Production Planning
- Marketing
- Venture Funding
- Mentors/ handholding
- IPR Facilitation
- Internationalization, + + +

13 Week Accelerator Programme

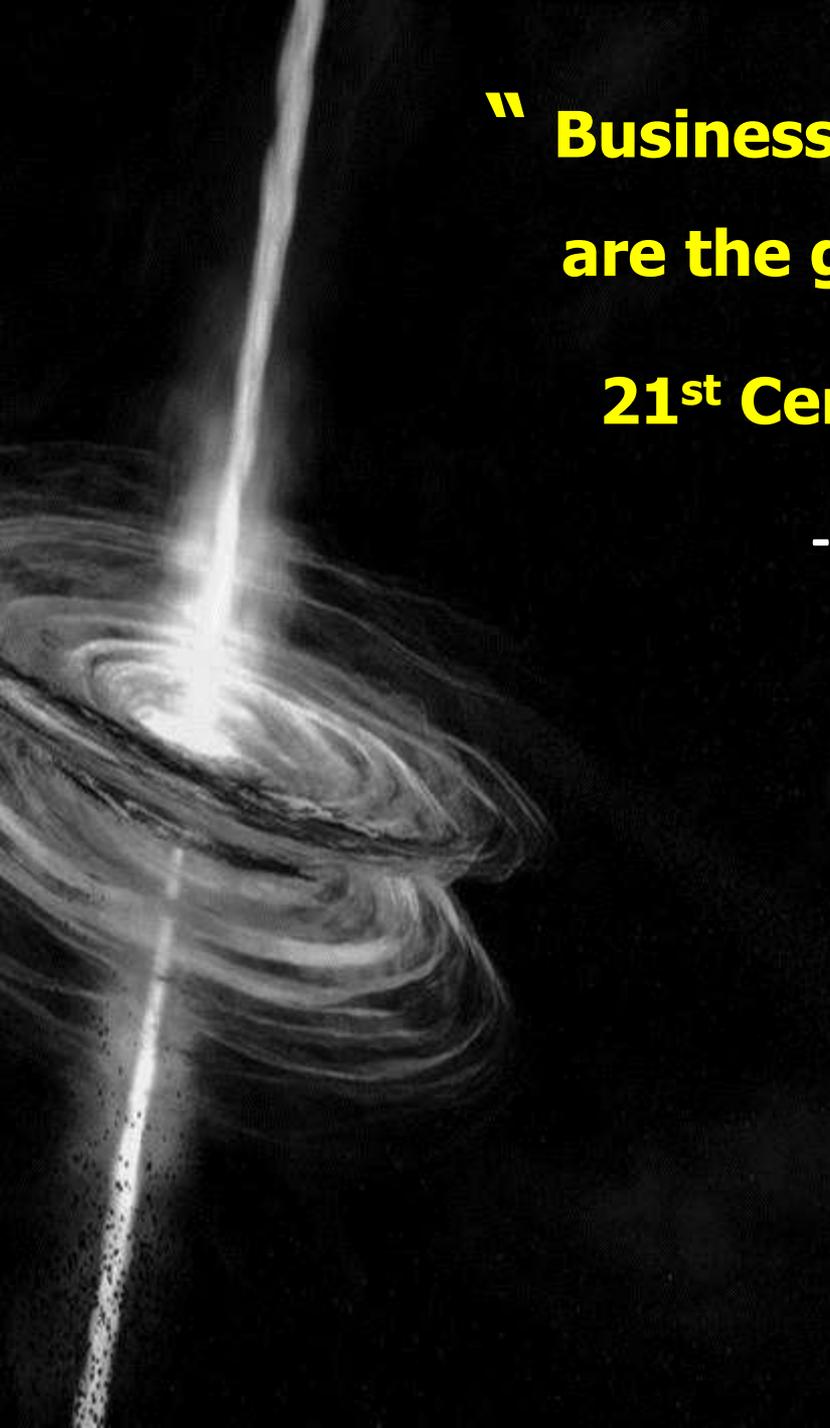
Cohort of 15 – 20 Teams

2 Boot Camps

Online Mentor Sessions & Lectures

Sessions with Designers, Engineers for prototyping

Demo Day with national and international investors



**“ Business Incubators & Science Parks
are the greatest innovation of the
21st Century Industrialization ”**

- Jiang Ziamin, Former Chinese Premier

Thank You !

TREC-STEP: Promoting an S & T based Eco-system for growth

Ushering in Innovation and S & T based growth

Intellectual
Infrastructure

Skills
Training
Knowledge
Networks
Research
Institutes
Social Vision
and The Will

Physical
Infrastructure

Tech Incubator
Supports
Connectivity
to
New markets
and
Others

Cultural
Infrastructure

Risk Culture
Innovation
Ambience
Venture Mind
Social
Recognition
& Reorganization

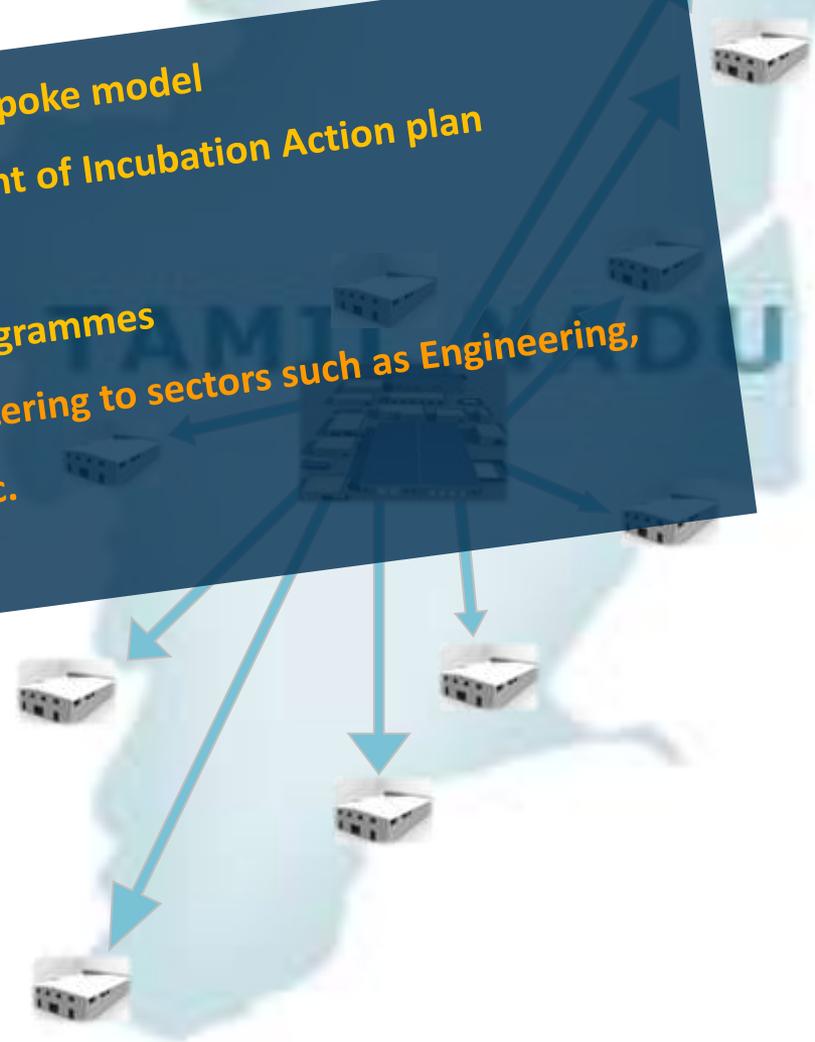
Financial
Infrastructure

Angel Funds
Innovation
Fund
Incubation
Fund
Tech.
Bridge
Fund
Micro
Investments

Business and Social Environment

Satellite Incubation Centres in Hub and Spoke Model

- 5- 10 Satellite Incubation centres in hub and spoke model
- Mother Resource Centre (MRC) with blue print of Incubation Action plan
- Training and handholding
- Synergy with national and international Programmes
- Manufacturing in green and clean space catering to sectors such as Engineering, Capital Goods, Food processing equipment etc.



Incubation of Innovative Agro based Industries

LSEC of 9 Members – Apex body

Oversees Incubation support to 15 Incubatees to nurture them as successful Agro rural tech. enterprises, in 3-5 years time

Incubation Services

Innovation fine tuning & Prototyping

Common Manufacturing facilities access

Business , Tech & R&D Networking

Training in Venture management skills

Strategic Planning – Prodn, Mktg, HR

Venture Funding at appropriate stages

Business & Tech. Mentors/ handholding

IPR Facilitation, Internationalization ++

Graduation & Sustainability planning

Incubation Processes

Business Incubation Packages

Business and Strategic Planning

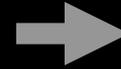
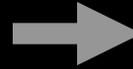
Infrastructure support

IPR Facilitation

Access to Start-up Finance

Internationalization and ICT Support

Inputs for Incubatees in Business Incubators ...'



- **Supply Side Intervention**
- **Curriculum Driven**
- **Defined Inputs**
 - **Theoretical Evaluation**
 - **Batch sized**
 - **Practice Immaterial**
- **No Responsibility for actual results**

- **Demand Side Intervention**
- **Need Driven but standardized**
- **Defined Inputs**
 - **Theoretical Evaluation with demos**
- **Team Oriented**
 - **Practice vital**
 - **Limited Responsibility for actual results**

- **More Demand Side Intervention**
 - **Need Driven Tailor made**
- **No Defined Inputs**
 - **Validation by Practice**
- **Individual Oriented**
- **Based on Practice Critical**
- **Full Responsibility for actual results**

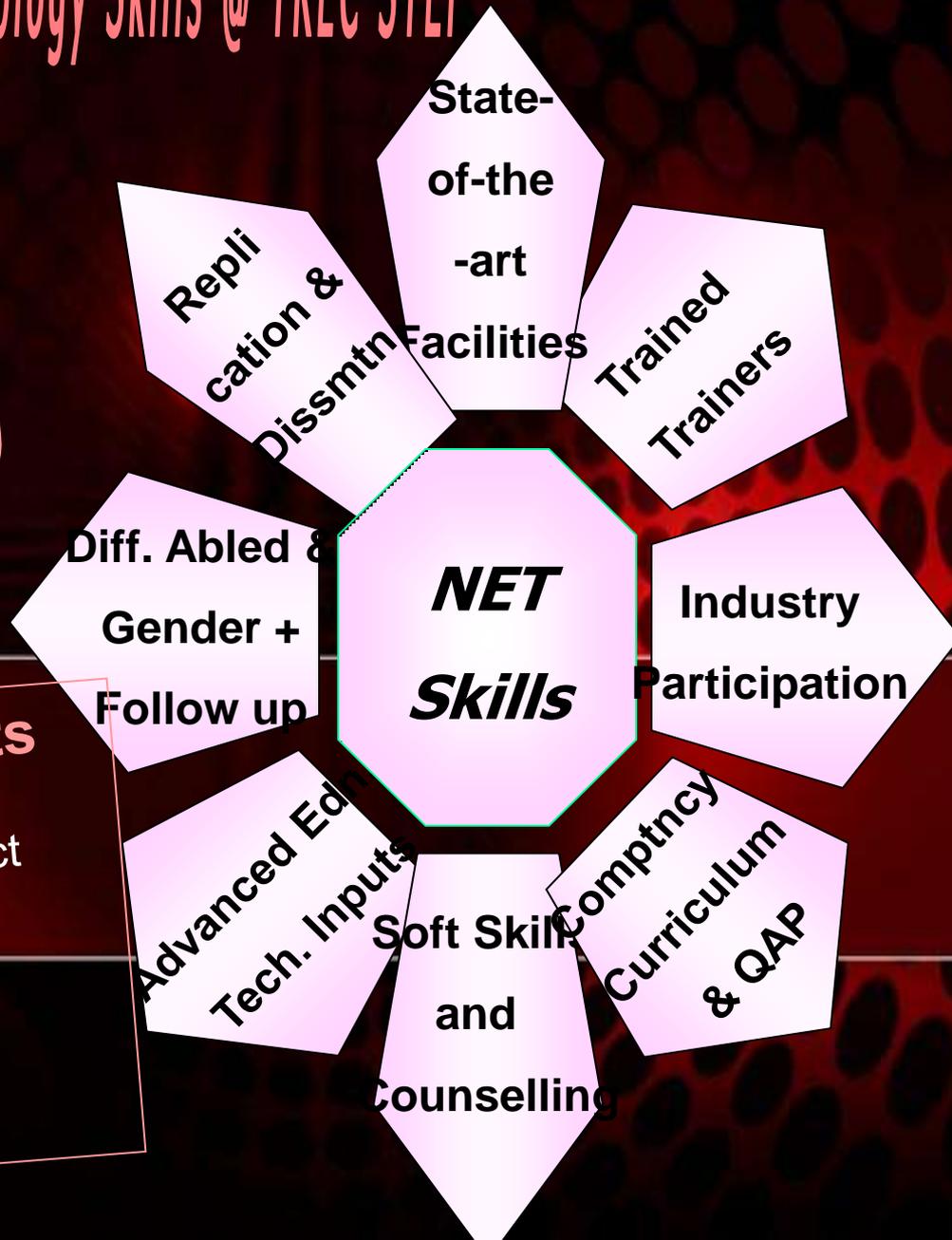
New Emerging Technology Skills @ TREC-STEP

UNDP -
VoTEG

9.5
10

EU ROM Results

Very Good – A
In Relevance of Project
Efficiency and
Effectiveness
Good - B
Impact prospects &
sustainability.



Incubatee Awards



2013 All India Management Association – Dr. J.S. Juneja Award for Creativity & Innovation



2011 Torch Best Entrepreneur Award, Asian Association of Business

National & International Awards -20

Employment generated 3799++



7 ISBA Best Entrepreneur Awards



'The Best Success Story Award' in Business Boosting Services and Soft-landing, EUROFFICE Services Project at Lyon, France

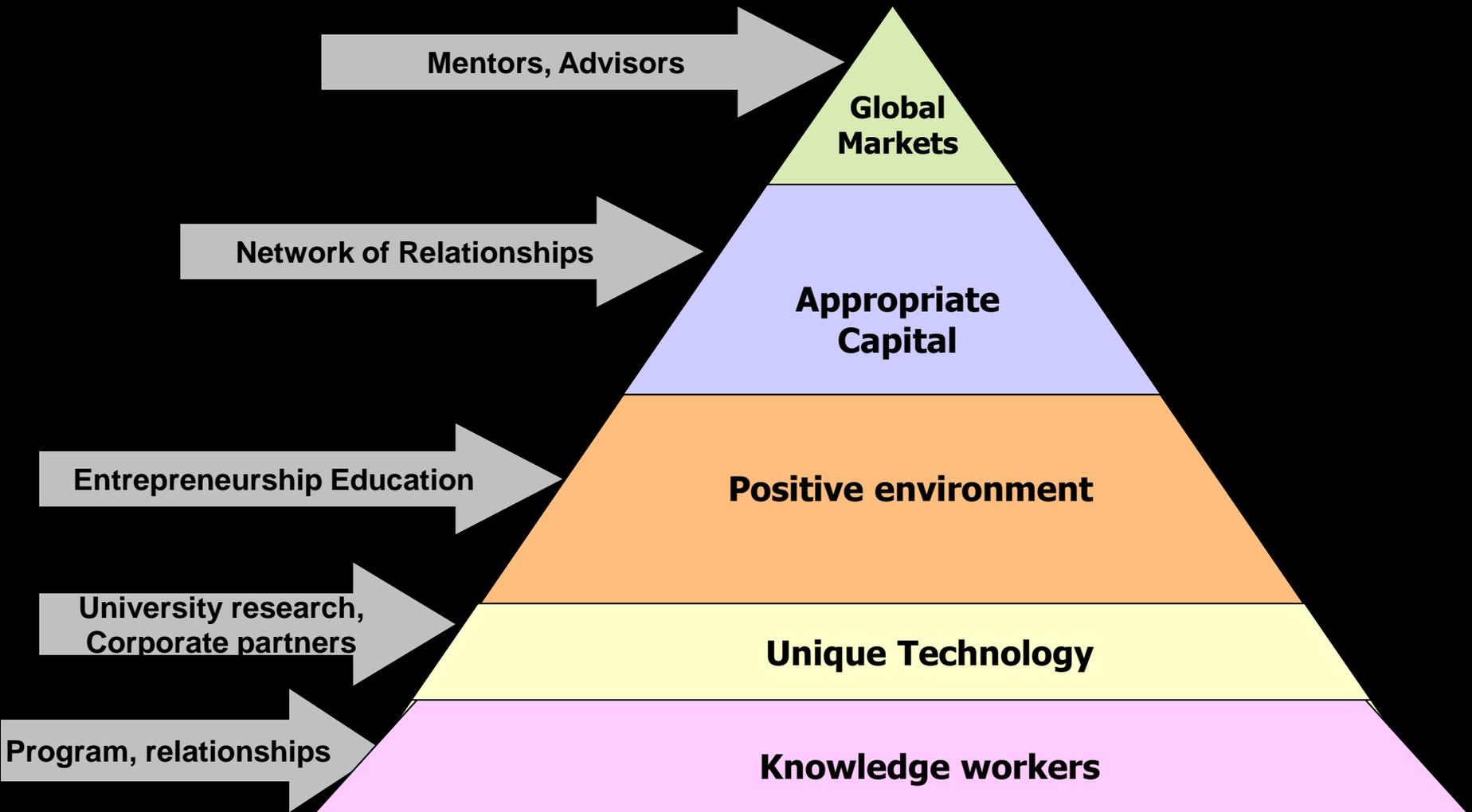


2009 – 3 Incubatees selected for the DST Lockheed Martin India Innovation Growth Programme

Exports to over 19 countries

25 Patents filed

Technology Entrepreneurship Ecosystem



TREC-STEP

Objectives

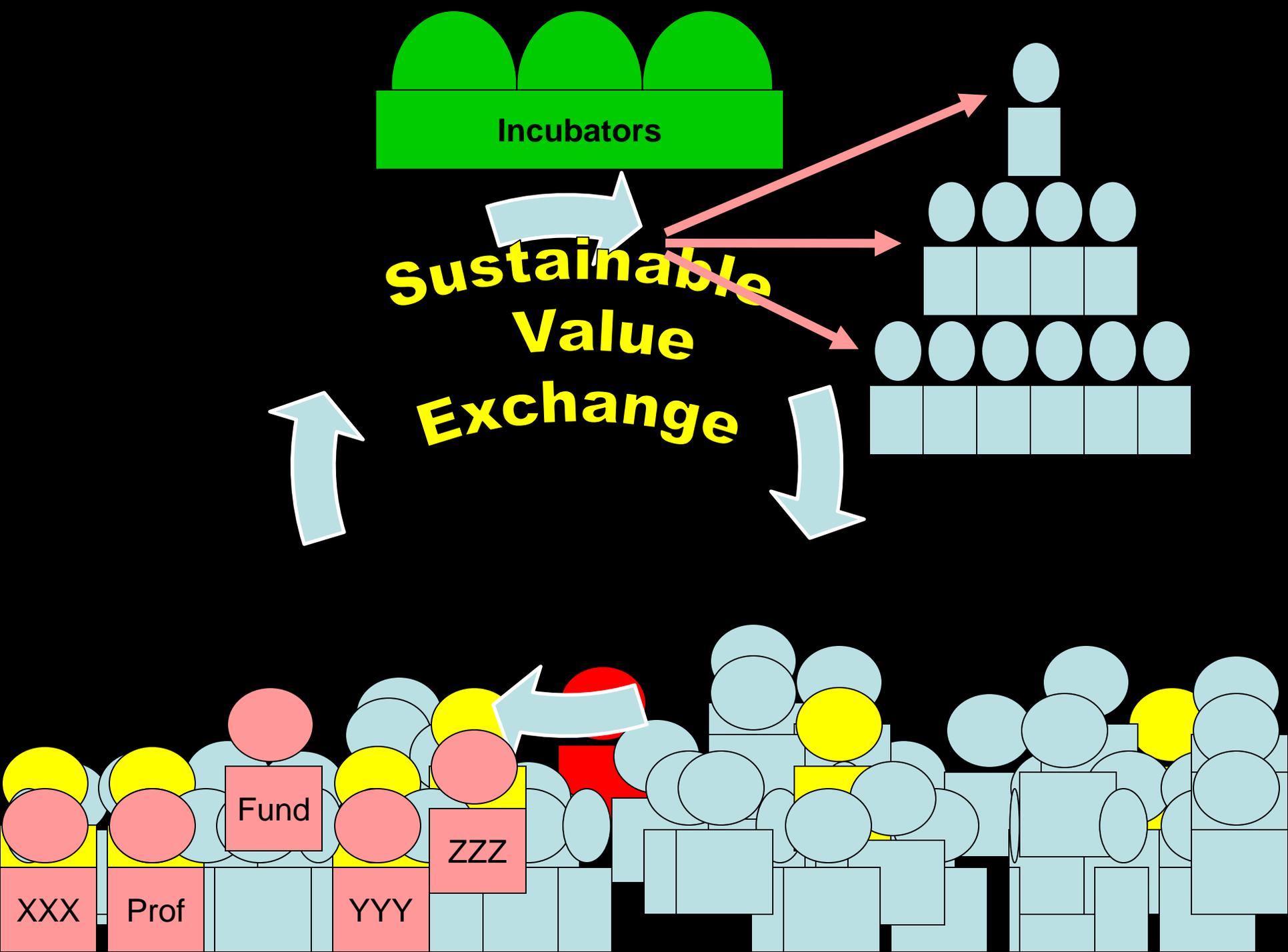
- Incubation of Innovative Technology Ventures
- Facilitating Technology Development
- Enabling Industrial Development
- Training in Technology and Management Skills
- Demonstration and Replication

**Promoting
Innovation,
Entrepreneurship
and
Skills**

Self Supporting Organization

Promoted in 1986 by

DST, Govt of Tamilnadu, Central and State FIs and NITT



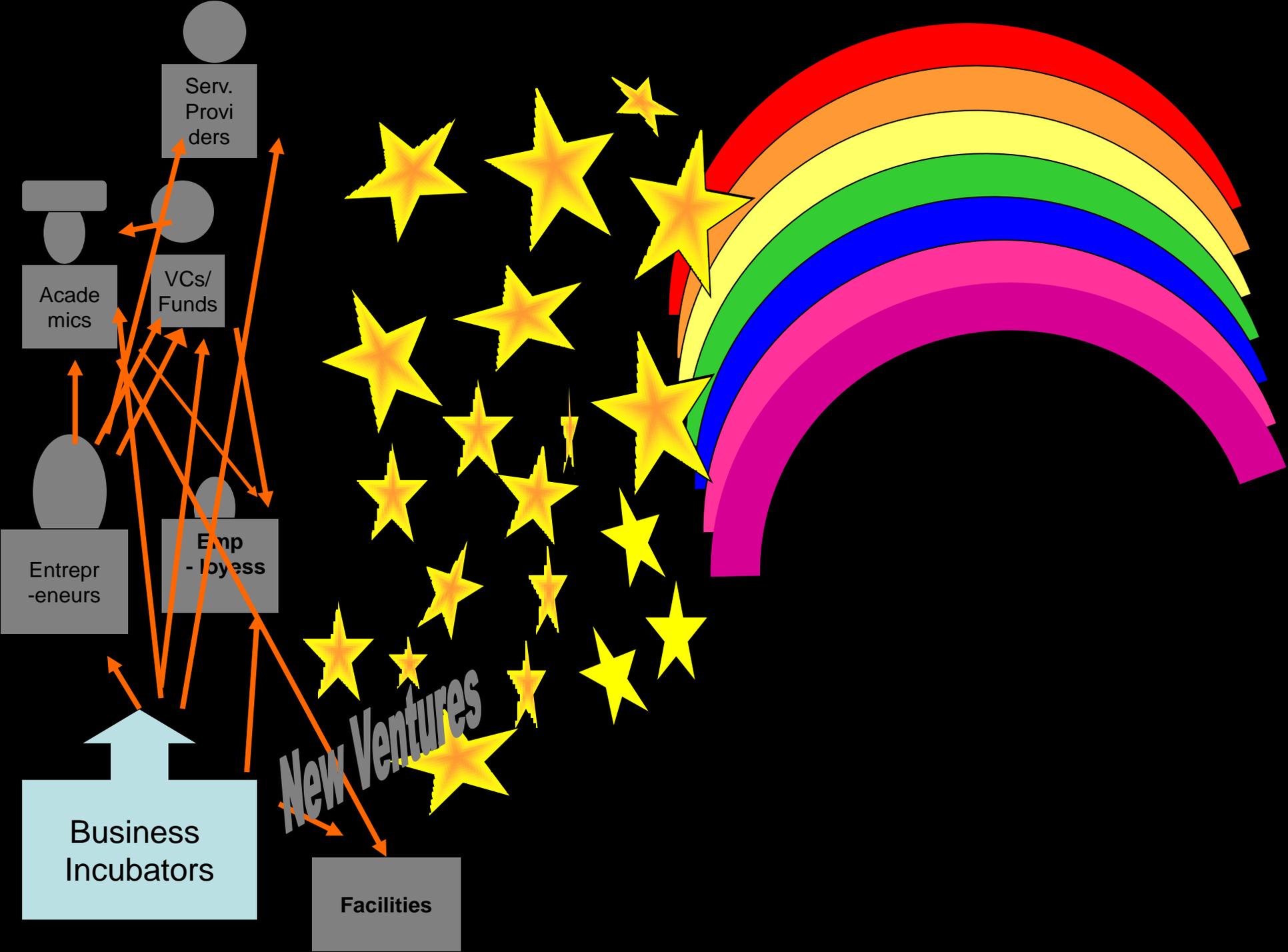
The Chennai International Incubation Centre

- New career avenues
Talent pool of Young Professionals
- Wider reach and stakeholder engagement – Corporate, Government, Industry associations, etc.
- Access Node, to Mentor pool, start-ups
- Target of 100 -
- Innovation bridge partnerships, D

Research for the vast

Have a breakthrough idea ?

- Mentoring - business strategies, technology and scale-up growth
- Accelerator Programmes
- Coaching & Training sessions
- Nursery Incubation Space/Modules
- State-of-art 24X7 PLUG-N-PLAY Co-working Space
- Common Production Facility
- Expert Marketing guidance and support
- Seed Fund Support for select ventures
- Facilitation & Escort services for funding
- Internationalization support
- Workshops / Events / Conferences



Serv. Providers

Academics

VCs/Funds

Entrepreneurs

Employees

Business Incubators

Facilities

New Ventures

TREC STEP

Value Network

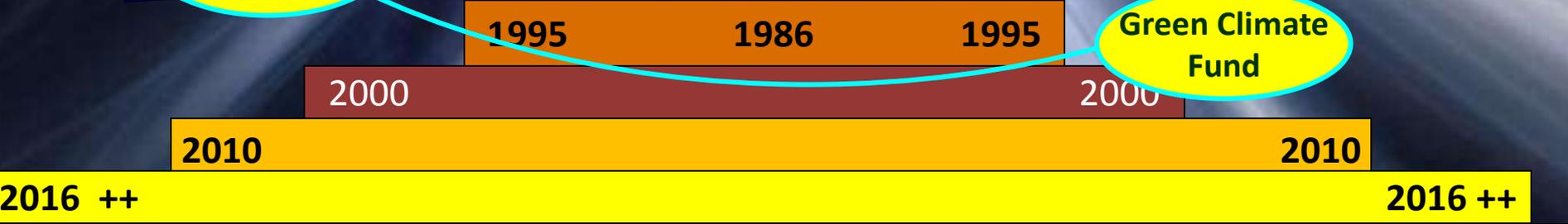
Global Enviro Fund

EU SWITCH Asia

Traction for Scale up

The Traction for Scale up

- First Incubator of India with 30 yrs. of successful inc. experience
- Many National / International Responsibilities
- Links with Research Innovation Venture Universe
- Tested and Validated Inc. Processes to suit Indian Culture
- Mentor pool of technology Incubation experts
- Awards & Accolades : World Bank, EU, UNOs, UKBI, AABI etc.
- Thrust area: Clean and Green Tech, Manufacturing, Energy & Environment





- Largest Democracy
- Nation of Nations
- Diversity and Heritage
- Hot Spot of Growth
- Knowledge Based

TREC-STEP

Objectives

- Incubation of New Ventures
- Facilitating Technology Development
- Enabling Industrial Development
- Training in Technology and Management Skills
- Dissemination and Application

Promoting Innovation, Entrepreneurship and Skills

Self Supporting Entrepreneurial Venture Organization

Promoted by

Federal and State Governments,
Financial Institutions and
National Institute of Technology @ Trichy

Awards won by TREC-STEP



EOS Award - Best Success Story Award @ Lyon France



World Bank - Devlpmnt. Mkt. Place Award 08

UKBI International Champion of Business Award

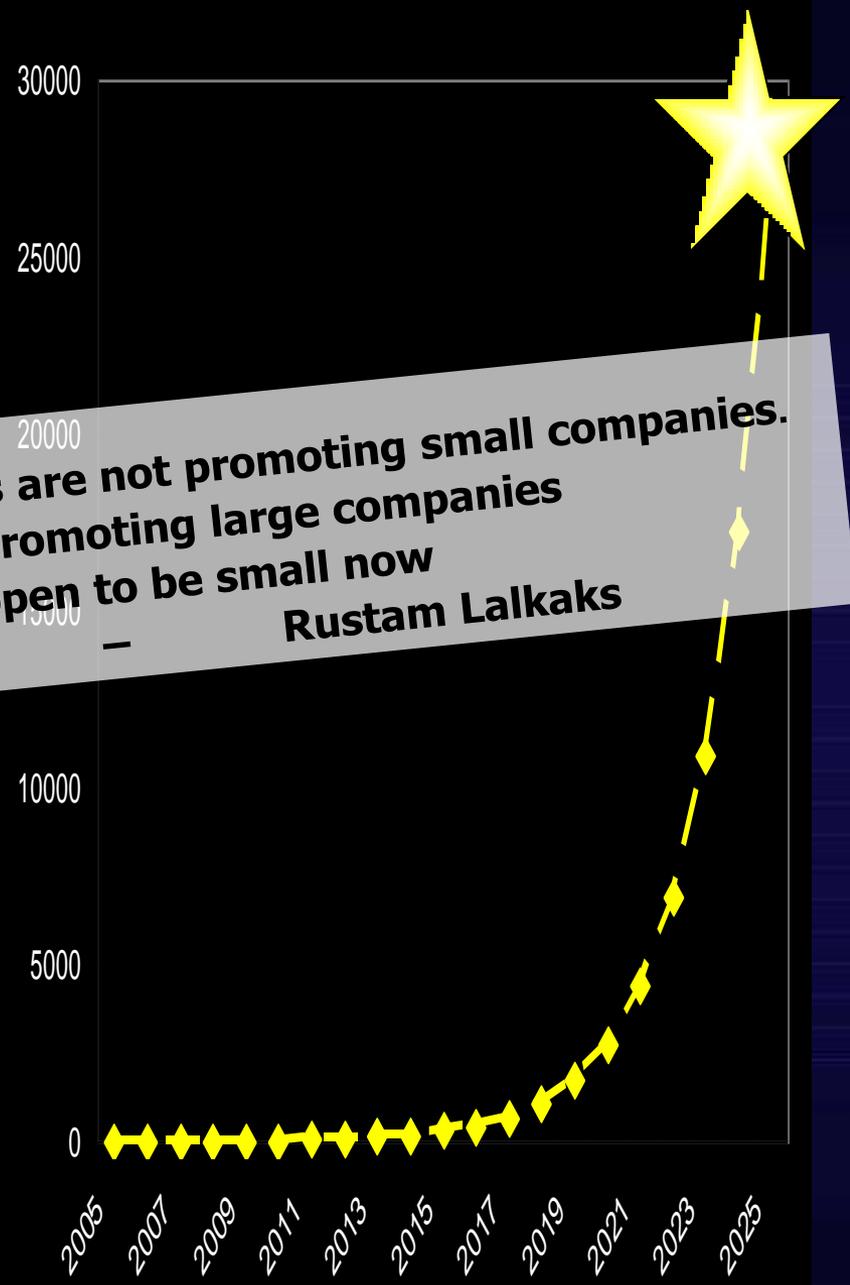
Best Entrepreneur Award 2003

Venture Highlights

1. Vinayapandi New Tool Inserts
2. Aravind Coolant Recovery
3. Dr Subhas Nano Molecule Scaffolds
4. Augustine Bio Mining
5. Jeya Kannan Extrn of Titanium Oxide
6. Dakhsina Manft. Systems
7. Karthik Digital X rays
8. Paneer Bio Fuels
10. Rayar New Sago Process

Year	Turnover	Employment
2006-07	0	0
Reality Now . . .		
2010	10 ml	100 Jobs
Cumulative Dreams . . .		
2016	10000 ml.	8,000 jobs

Incubators are not promoting small companies. They are promoting large companies which happen to be small now
 — Rustam Lalkaks



Innovation :
New products / processes

Human Development

Investment

Regional Development

Jobs 300 per mln.

Community

Government & Society

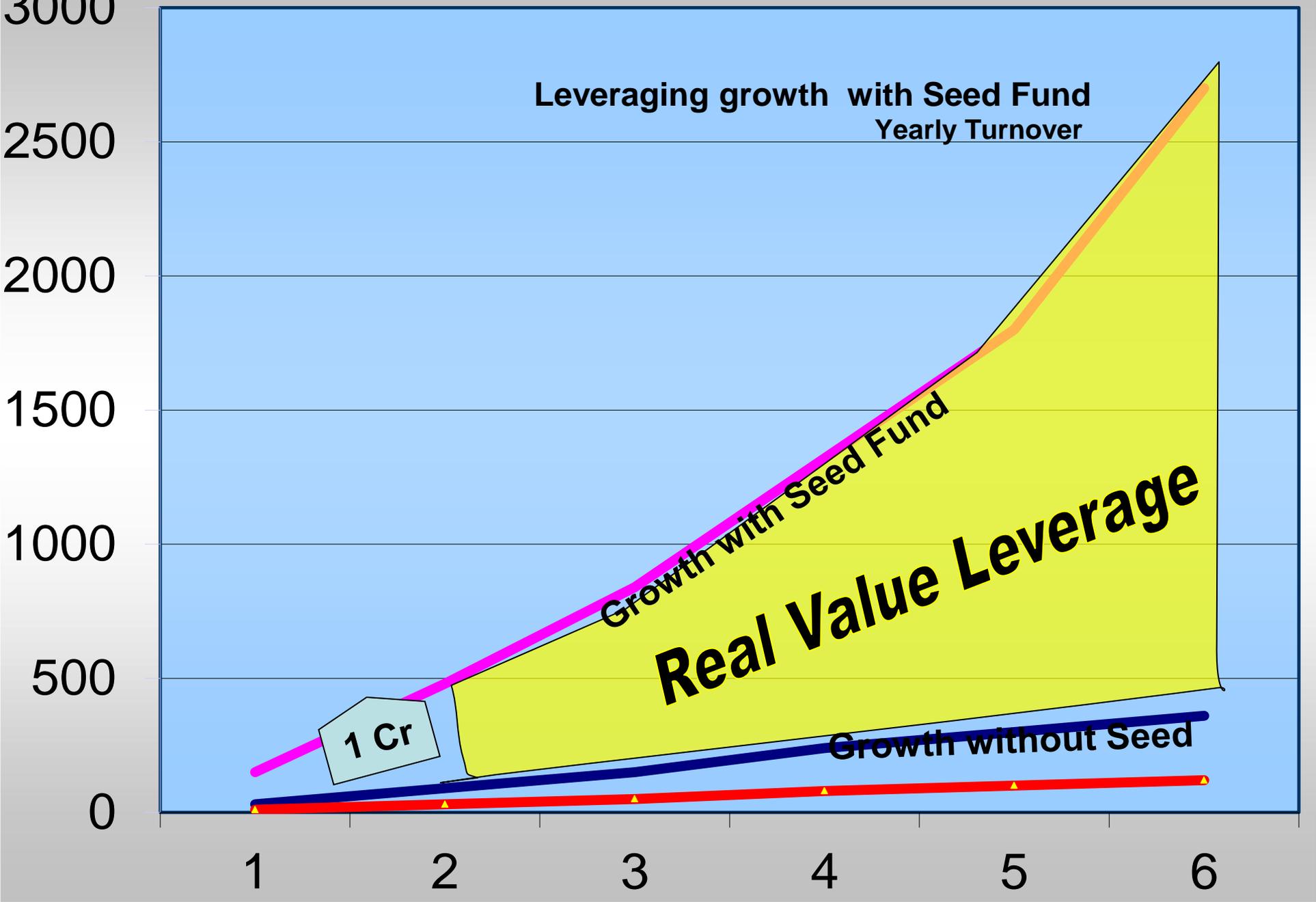
BI Investment

After 5 to 7 years

Tax Revenue to Governments (Profit, Turnover, Manufacturing Taxes)

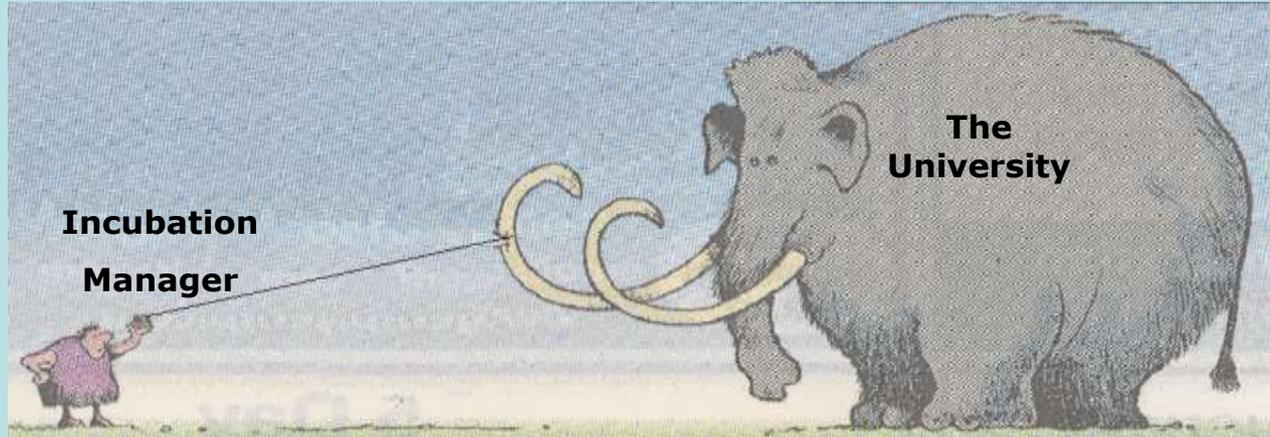
Business Incubator,

The Rainbow Equation ...!



Isis Innovation, [University of Oxford](#) : Dr. Tim Cook ...

On Managing your relationship with a university



Like leading an elephant with a thin rubber band

- **Walk along with the elephant**
 - **In whichever direction it chooses to go**
 - **Until it gets used to you**
- **Start to pull gently on your rubber band**
- **If you pull too hard or too suddenly**
 - **You will break your rubber band and**
 - **Have no further influence over the elephant**

But

- Don't think you will ever have complete control



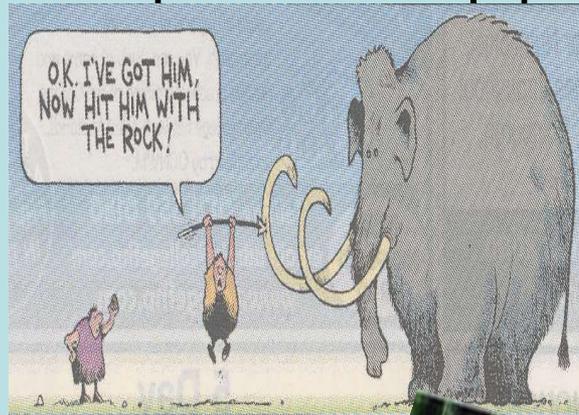
Cartoon by Stoney, Ravette Publishing +44 1403 711443 Tony Lopez (Copyright)

Other Potentials!



will

cc



Management of Incubation for Innovation and Entrepreneurship for LAD

Management of Incubatees

Management of Incubator

Welcome back !



TREC-STEP

**Tiruchirappalli Regional Engineering College –
Science and Technology Entrepreneurs Park. India**



**Experiences in
Winning and
Loosing
Proposals**

Mapping the Track Record of TREC-STEP in Proposal Making

EU Series

SPF, ECCP, Asia Invest, FP6 & 7, Europe Aid, SWITCH Asia++

Word Bank Group

1. InfoDev and
2. Development Market Place

International Development Research Centre, Canada

Rockefeller Foundation/ USAID

British Council Division



Proposal Making Process !

- **The Hunt**
- **The Read–Call For Proposals CFP/RFP**
- **The Design of Project Concept**
- **The Partnership Build Up**
- **The Study / Survey and Unique Inference**
- **The Team Declaration**
- **The Writing**
- **The Documentation–Supportive Supplements**
- **The Iterations with Mock Evaluation**
- **The Finish – Perfection vs Practical**

EU Application Model

Content	Number of Page
1. Description	
1.1. Title	
1.2. Location(s)	
1.3. Cost of the action and amount requested from the European Commission	in specified format
1.4. Summary	Max 1 page
1.5. Objectives	Max 1 page
1.6. Relevance of the action	Max 3 pages
1.7. Description of the action its effectiveness	Max 17 pages
1.8. Methodology	Max 4 pages
1.9. Duration and indicative action plan for implementing the action	in specified format
1.10. Sustainability	Max 3 pages
1.11. Logical Framework	in specified format
2. Budget for the Action	in specified format
3. Expected Sources of Funding	in specified format
4. Applicant's Experience of Similar Actions	Each Activity 1 page
5. Partner's Experience of Similar Actions	Each Activity 1 page

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2. Budget for the Action	in specified format
3. Expected Sources of Funding	in specified format
4. Applicant's Experience of Similar Actions	Each Activity 1 page
5. Partner's Experience of Similar Actions	Each Activity 1 page

- Provide a general presentation and an analysis of the problems and their interrelation at all levels.
- Provide a detailed description and estimated number of the target groups and final beneficiaries.
- Identify clearly the specific problems to be addressed by the action and the perceived needs and constraints of the target groups.
- Demonstrate the relevance of the action to the needs and constraints of the target country in general and to those of the target groups/final beneficiary groups in particular and the action will provide the desired solutions, in particular for the targeted beneficiaries.

- Provide a description of the proposed action including, where relevant, background information that led to the formulation of the action. This should include:
 - Expected results (max 5 pages). Indicate how the action will improve the situation of target groups/beneficiaries as well as the technical and management capacities of target groups and/or any local partners. Be specific and quantify the results as much as possible. Indicate notably foreseen publications. Describe the possibilities for replication and extension of the action results (multiplier effects).
 - The proposed activities and their effectiveness (max 12 pages). Identify and describe in detail each activity to be undertaken to produce the results, justifying the choice of the activities and specifying the role of each partner (and associates or subcontractors where applicable) in the activities. In this respect, the detailed description of activities must not repeat the action plan (to be provided in section 1.9 below).

Note: The scores awarded in this phase are completely separate from those given to the concept note of the same application.

Evaluation Grid

Section	Maximum Score	Application form
1. Financial and operational capacity	20	
1.1 Do the applicant and partners have sufficient experience of project management ?	5	II.4.1 and III.1
1.2 Do the applicant and partners have sufficient technical expertise ? (notably knowledge of the issues to be addressed.)	5	II.4.1 and III.1
1.3 Do the applicant and partners have sufficient management capacity ? (including staff, equipment and ability to handle the budget for the action)?	5	II.4.2 and III.1
1.4 Does the applicant have stable and sufficient sources of finance ?	5	II.4.2
2. Relevance	25	
2.1 How relevant is the proposal to the objectives and one or more of the priorities of the call for proposals? Note: A score of 5 (very good) will only be allocated if the proposal specifically addresses at least one priority . Note: A score of 5 (very good) will only be allocated if the proposal contains specific added-value elements, such as promotion of gender equality and equal opportunities, models of best practice etc.	5 x 2	I.1.6.1
2.2 How relevant to the particular needs and constraints of the target country/countries or region(s) is the proposal? (including avoidance of duplication and synergy with other EC initiatives.)	5	I.1.6.2
2.3 How clearly defined and strategically chosen are those involved (final beneficiaries, target groups)? Have their needs been clearly defined and does the proposal address them appropriately?	5 x 2	I.1.6.3 and I.1.6.4
3. Methodology	25	
3.1 Are the activities proposed appropriate, practical, and consistent with the objectives and expected results?	5	I.1.7 and I.1.8.5
3.2 How coherent is the overall design of the action? (in particular, does it reflect the analysis of the problems involved, take into account external factors and anticipate an evaluation ?)	5	I.1.8
3.3 Is the partners' level of involvement and participation in the action satisfactory? Note: If there are no partners the score will be 1.	5	I.1.7 and I.1.8.5
3.4 Is the action plan clear and feasible?	5	I.1.9
3.5 Does the proposal contain objectively verifiable indicators for the outcome of the action?	5	Logframe
4. Sustainability	15	
4.1 Is the action likely to have a tangible impact on its target groups?	5	I.2.1
4.2 Is the proposal likely to have multiplier effects ? (including scope for replication and extension of the outcome of the action and dissemination of information.)	5	I.2.2 and I.2.3
4.3 Are the expected results of the proposed action sustainable : - financially (how will the activities be financed after the funding ends?) - institutionally (will structures allowing the activities to continue be in place at the end of the action? Will there be local "ownership" of the results of the action?) - at policy level (where applicable) (what will be the structural impact of the action — e.g. will it lead to improved legislation, codes of conduct, methods, etc?)?	5	I.2.4
5. Budget and cost-effectiveness	15	
5.1 Is the ratio between the estimated costs and the expected results satisfactory?	5	I.3
5.2 Is the proposed expenditure necessary for the implementation of the action?	5 x 2	I.3
Maximum total score	100	

If the total score of this section is less than 12 points then the proposal will be rejected

If the total score of this section is less than 16 points then the proposal will be rejected

IDRC Application Model

SECTION A: CHECKLIST

SECTION B: SUMMARY OF PROPOSED RESEARCH PROJECT

GENERAL INFORMATION, PROJECT LEADER, PROPOSING INSTITUTION COLLABORATING INSTITUTIONS (if applicable) PARTICIPATING INSTITUTIONS (if applicable) PARALLEL FUNDS (Summary)

ABSTRACT OF RESEARCH PROJECT (should not exceed 250 words)

SECTION C: DETAILS OF RESEARCH PROJECT (not exceeding 20 single-spaced pages)

RESEARCH PROBLEM AND JUSTIFICATION: (about one quarter to one half of your proposal)

OBJECTIVES: (no more than half a page)

METHODOLOGY

- Conceptual and theoretical framework
- User participation
- Data collection
- Data analysis
- Gender considerations
- Ethical considerations
- Training
- Organizational matters
- Collaboration with Canadian institutions

PROJECT SCHEDULE

RESULTS AND DISSEMINATION

INSTITUTIONS AND PERSONNEL

SECTION D: PROPOSED BUDGET AND TIMETABLE (12 pages)

SECTION E: BANK INFORMATION

SECTION F: QUALIFICATIONS AND EXPERIENCE OF RESEARCH TEAM



Brussels, AIDCO/D3/D(2007)10991
 28 MAI 2007

Mr. R. M. P. Jawahar
 TIRUCHIRAPPALLI REGIONAL
 ENGINEERING COLLEGE SCIENCE AND
 TECHNOLOGY ENTREPRENEURS PARK
 NITT CAMPUS THUVAKUDI
 TIRUCHIRAPPALLI TAHIL NADU
 620015 TIRUCHIRAPPALLI
 IN-India

The Results

Call for proposals EuropeAid/122-960/C/ACT/CAI-2
 Asia-Invest Programme 2006-2007

Application ref. ASIE/2007/ 137-374/144
 EU-Asia Business Incubators Web Mapping and Capacity Building for
 Cross Cultural Venture promotion

Dear Sir/Madam

With reference to the above application, I regret to have to inform you that your full application has not been selected by the Evaluation Committee for award of a grant financed by the European Community.

- Your application has not achieved the minimum score required for relevance to the objectives and priorities of the Call for Proposals

For your information, please find below the average scores awarded to your full application in accordance with the evaluation grid detailed in section 2.3(3) of the Guidelines for applicants.

Financial and operational capacity	
Do the applicant and partners have sufficient experience of project management?	3.5/5
Do the applicant and partners have sufficient technical expertise? (notably knowledge of the issues to be addressed.)	4/5
Do the applicant and partners have sufficient management capacity? (including staff, equipment and ability to handle the budget for the action)?	3.5/5
Does the applicant have stable and sufficient sources of finance?	2.75/5
Relevance	
How relevant is the proposal to the objectives and one or more of the priorities of the call for proposals?	6.5/10
How relevant to the particular needs and constraints of the target country/countries or region(s) is the proposal? (including avoidance of duplication and synergy with other EC initiatives.)	3/5

How clearly defined and strategically chosen are those involved (final beneficiaries, target groups)? Have their needs been clearly defined and does the proposal address them appropriately? 6/10

Methodology

Are the activities proposed appropriate, practical, and consistent with the objectives and expected results? 3/5

How coherent is the overall design of the action? (in particular, does it reflect the analysis of the problems involved, take into account external factors and anticipate an evaluation?) 3/5

Is the partners' level of involvement and participation in the action satisfactory? 4/5

Is the action plan clear and feasible? 3/5

Does the proposal contain objectively verifiable indicators for the outcome of the action? 3.25/5

Sustainability

Is the action likely to have a tangible impact on its target groups? 2.75/5

Is the proposal likely to have multiplier effects? (including scope for replication and extension of the outcome of the action and dissemination of information.) 3.25/5

Are the expected results of the proposed action sustainable? 3.5/5

Budget and cost-effectiveness

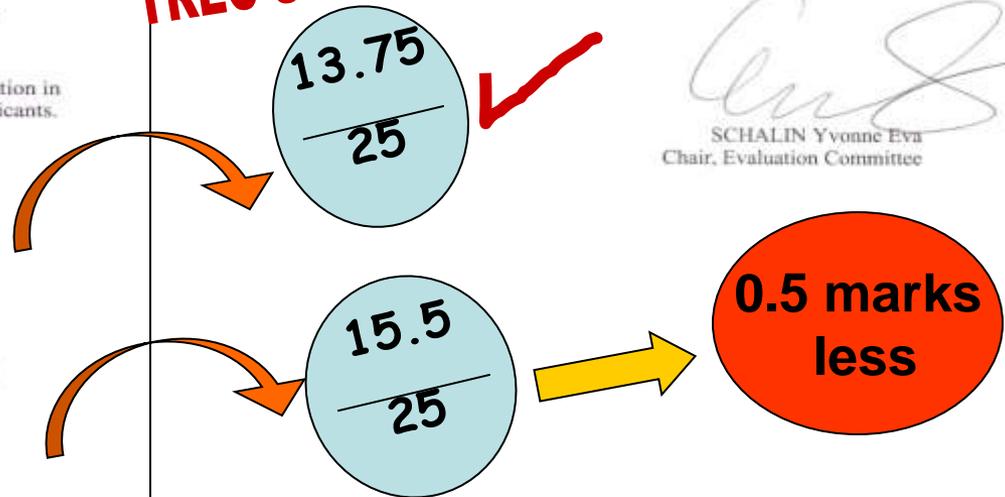
Is the ratio between the estimated costs and the expected results satisfactory? 2.5/5

Is the proposed expenditure necessary for the implementation of the action? 4.5/10

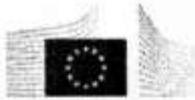
I take this opportunity to thank you for your interest in participating in the present call for proposals and hope that the above information will assist in preparing for any future call published by the European Commission for which you may wish to submit an application.

Yours faithfully

TREC-STEP's Score



SCHALIN Yvonne Eva
 SCHALIN Yvonne Eva
 Chair, Evaluation Committee



EUROPEAN COMMISSION

Directorate-General for Development and Cooperation - EuropeAid
Asia, Central Asia, Middle East/Gulf and Pacific
Finance, Contracts, Audit

Restricted call for proposals

Brussels,

31 JUL 2013

Mr. R.M.P. Jawahar
TIRUCHIRAPPALLI REGIONAL
ENGINEERING COLLEGE SCIENCE AND
TECHNOLOGY ENTREPRENEURS PARK
Thuvakudi
620 015 Tiruchirappalli
IN - India

Call for proposals

EuropeAid/133-608/C/ACT/Multi
5th SWITCH-Asia - Promoting Sustainable Consumption &
Production

Application reference

DCI-ASIE/2013/60
Sustainable Production Accelerated Replication through Knowledge
Led Innovative Green Economy SMEs - SPARKLING Eco SMEs

Dear Sir/Madam,

Thank you for submitting a full application for the above call for proposals. Please use the reference number above in any correspondence regarding your application.

However, I regret to inform you that your full application could not be considered for following reason(s)

Your full application received a lower score than the ones selected to go through to the next step of procedure.

For information, please find below the scores awarded to your full application, in accordance with evaluation grid in the Guidelines for Applicants:

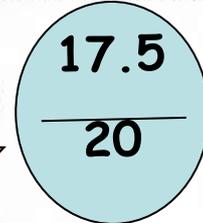
- Financial and operational capacity 4.5/5
- Do the applicant and partners, if applicable, have sufficient experience of project management? 4.5/5
- Do the applicant and partners, if applicable, have sufficient technical expertise? (notably knowledge of the issues to be addressed.) 4.5/5
- Do the applicant and partners, if applicable, have sufficient management capacity? (including staff, equipment and ability to handle the budget for the action)? 4.5/5
- Does the applicant have stable and sufficient sources of finance? 4/5
- Relevance of the action 8/10
- How relevant is the proposal to the objectives and priorities of the Call for Proposals? 8/10
- How relevant to the particular needs and constraints of the target country (ies) or region(s) is the proposal? (including synergy with other EU initiatives and avoidance of duplication) 8/10
- How clearly defined and strategically chosen are those involved (final beneficiaries, target groups)? Have their needs been clearly defined and does the proposal address them appropriately? 4/5

- Does the proposal contain specific added-value elements, such as environmental issues, promotion of gender equality and equal opportunities, needs of disabled people, rights of minorities and rights of indigenous peoples, or innovation and best practices and the additional elements indicated under 1.2 of the Guidelines 4.5/5
- Effectiveness and feasibility of the action
- Are the activities proposed appropriate, practical, and consistent with the objectives and expected results? 2/5
- Is the action plan clear and feasible? 3.5/5
- Does the proposal contain objectively verifiable indicators for the outcome of the action? Is evaluation foreseen? 3/5
- Is the partners' level of involvement and participation in the action satisfactory? 3/5
- Sustainability of the action
- Is the action likely to have a tangible impact on its target groups? 3/5
- Is the proposal likely to have multiplier effects? (Including scope for replication and extension of the outcome of the action and dissemination of information.) 3/5
- Are the expected results of the proposed action sustainable? 2/5
- Budget and cost-effectiveness of the action
- Are the activities appropriately reflected in the budget? 5/10
- Is the ratio between the estimated costs and the expected results satisfactory? 3/5

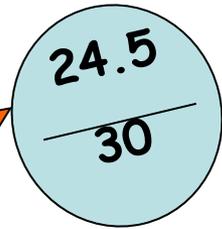
Therefore, your application could not be considered further under the present call for proposals.

I take this opportunity to thank you for your interest in participating in the present call for proposals and hope that the above information will assist in preparing for any future call you may wish to submit an application.

Yours faithfully,

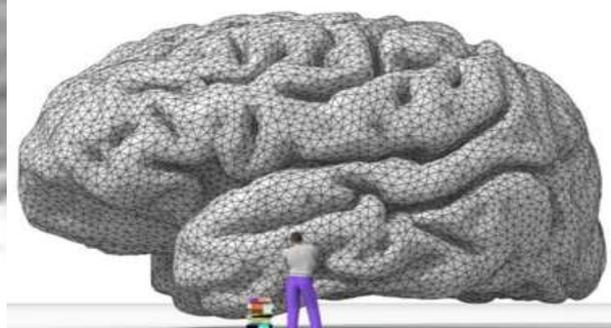


Jean-Claude BOIDIN
Head of...



TREC-STEP's Score

What is needed for a good proposal ?



Different Models of Call-for-Proposal Processes

EU Model

Concept Note

Str – 4 pages & 3 Secs

Evaluation Grid (50 marks)

Criteria – Relevance(15), Effectiveness & Feasibility (25) and Sustainability (10)

Score should be Relevance > 12 and Total > 30

Full Application Docs

Str – 50 pages & 11 Secs

Evaluation Grid (100 marks)

Criteria – Capacity (20), Relevance (25), Methodology (25), Sustainability (10) and Budget (15)

Score should be Capacity>12 & Relevance>20

Supportive Documents (Eligibility Check)

Award

Implementation

IDRC Model

EOI Pre-proposal
Str – 15 pages & 5 Secs

Project Officer
Pros/Cons

Proposal Docs

Peer Review

Proposal Meeting with Coordinators

Award

Implementation

WB DM Model

Application

Str-Character count & 10Secs

Evaluation by Specified Assessment Criteria

Award of Finalist 100 / 1800

Detailed Application

Submission with Consultants support for Technical Assistance & 2 Reviews

Market Place Exhibition at Washington, DC

Jury Interview

Award

Implementation

Country Resource Person Coordination

WB infoDev Model

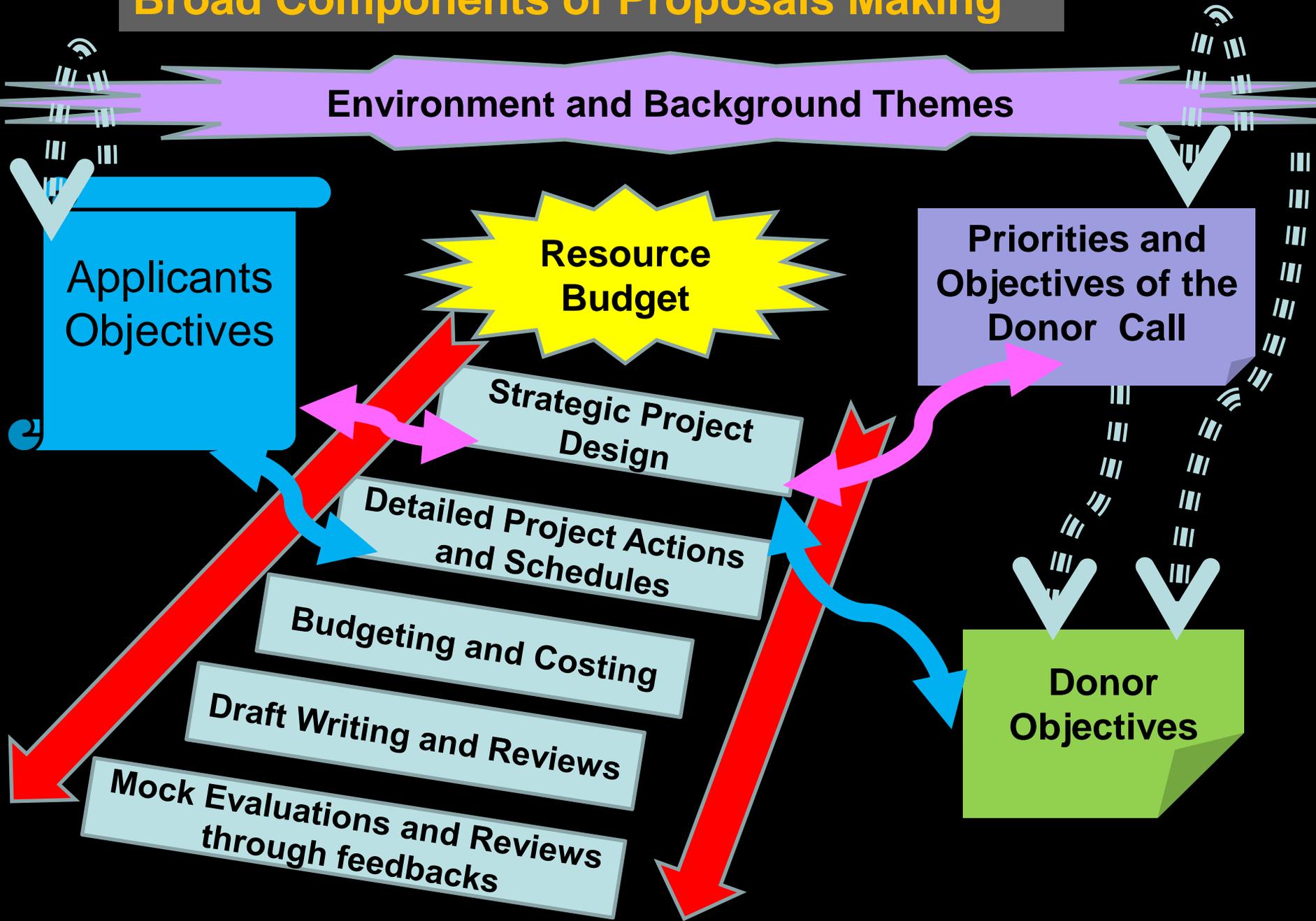
Application
Str – 20 pages & 14 Secs

Proposal Assessments – specified broad criteria

Award

Inception Report

Broad Components of Proposals Making



Proposal Making - A Team's Play

Navigator

Engine

Pilots

Chief Steward

ATC

Air Traffic Control

Ground Staff

The Results ...

- **Receiving the results**
- **Analyzing the results**
- **Communicating to partners and Others**
- **Documenting it , for future use**

Project Implementation...

- **Promos and visibility**
- **M & E**
- **Results oriented monitoring & future use**
- **Documenting and dissemination**
- **Sustainability and Replication**

World Bank Development MarketPlace sponsored Mini Cold Storage Units Project

Preamble

- Post harvest wastage of vegetables in India - nearly \$6 billion
- Affects the earnings of > 10 mln farmers
- Yawning gap between large cold storage and domestic refrigerators
- Optimum tailor made Mini Cold Stores for farmers markets are needed



Project Idea

venture promotion
knowledge

technology domain expertise
and networks

- Promoted 200+ start-ups
- Train nearly 2000-3000 youth in technology skills
- Supported more than 4000 Micro ventures

Micro ventures

Mini Cold Storage Units Project

- Competent technology solution
- Studying field conditions
- Designing Mini Cold Storage Units – 5 nos
- Training and Deploying rural youth

Information and A/C

based training

training facilities

trainers,

partnership with OEMs,

local technology inputs

delivery systems

Storage requirements Study - Trichy farmers market

Development Market Place : Cold Storage Units at Farmers Markets - Study

Vegetable Classification as "A, B and C" Classes as per Storage Requirements

Sl.NO	Vegetables Name	Price in Indian Rupee	Vegetable Arrival	Wastage	Storage	Waste %	Value of Wastage of Vegetables	% of Value of Wastage of Vegetables	Cumulative % Value of Wastage of Vegetables
1	Tomatto	14	3300	300	500	9%	4200	34%	34%
2	Broad Beans	24	625	50	100	8%	1200	10%	44%
3	Ladies finger	12	500	100	50	20%	1200	10%	54%
4	Brinjal	20	700	50	100	7%	1000	8%	62%
5	Carrot	15	300	50	50	17%	750	6%	68%
6	Bittergaurd	14	300	50	50	17%	700	6%	74%
7	Beans (motchai)	15	300	30	50	10%	450	4%	78%
8	Ginger	42	130	10	20	8%	420	3%	81%
9	Potato	12	1300	30	300	2%	360	3%	84%
10	Greens (kerai)	3	600	100	100	17%	300	2%	87%
11	Cauliflower	15	160	20	30	13%	300	2%	89%
12	Beet root	7	220	30	40	14%	210	2%	91%
13	Cluster Beans	10	140	20	10	14%	200	2%	92%
14	Snake Guard	10	350	20	30	6%	200	2%	94%
15	Beans	20	270	10	30	4%	200	2%	96%
16	Cabbage	5	180	30	50	17%	150	1%	97%
17	Radish	6	250	20	30	8%	120	1%	98%
18	Long Beans (thataikai)	8	125	10	10	8%	80	1%	99%
19	Banana	3	1500	20	50	1%	60	0%	99%
20	Green chilli	10	130	5	20	4%	50	0%	100%
21	Mint Leafs (puthina)	6	90	5	10	6%	30	0%	100%
22	Corianda leaf	6	100	5	10	5%	30	0%	100%
Total Value of Vegetables			11570	965	1640	212%	12210		
Average % Wastage of Vegetables			8%						
Average % Storage of Vegetables			14%						

A

B

C

Vegetable Classification on Storage Requirements- Trichy farmers market

Grouped together in terms of Temperature and Humidity Requirements :

Sl.No	Vegetables	Age Temperature	Humidity	Arrivals	Class Total	% ge	Storage	Total	Percentage
1	Carrot	8	85-90	300			50		
2	Bitter Gourd	5 to 7	85-90	300			50		
3	Potato	8	85-90	1300			300		
4	Cauliflower	8	85-90	300			50		
5	Brinjal	7 to 10	85-95	700			100		
6	Beans	4 to 10	90-95	300			90		
7	Tomatoe	10	85-90	3300			500		
					6500	75%		1140	74%
8	Broad Beans	25	80-90	625			100		
9	Ladies Finger	24 to 26	70-75	500			50		
10	Spinachs (Keerai)	32	95-100	500			50		
					1625	19%		200	13%
11	Beet root	0	95	220			50		
12	Cluster Beans	0	85-95	140			70		
13	Cabbage	0	90-95	180			80		
					540	6%		200	13%
Total					8665			1540	

Mini Cold Storage Design



- TREC-STEP Refrigeration team studied the survey outputs
- Series of interaction meetings with farmers, farmers market managers and Govt. officials in Tamilnadu Government
- Design Interaction Meetings with cold storage manufacturers and finalize the design and requirements
- designed 2 mini chambers
- sizes 5ft X 3ft X 7.4ft & 10ft X 3ft X7.4ft
- Polyurethane foam Puf panels for wall and ceiling
- Condenser units
- Humidifier units with sensors

Establishing Mini Cold Storage Units

- First Phase - Mini Cold Storage Units at Karur and Kumbakonam
- Conducted field Surveys to fine tune design
- Modified units installed – size increased, door position etc. at Palayamkottai, Salem and Nanganallur

Training unemployed youth in Technical / Business Skills

- 36 unemployed youth were given 3 months technical Training in Refrigeration and A/C
- 18 candidates were trained in Business Skills
- On-site technical training at Mini cold units



Currently ...

- **5 Mini cold storage units –Small Farmer mkts.**
- **Handed over to the State Government**
- **Successful case study - documentary by WB**
- **Replicated in 40 locations across India and Worldwide ++**

Future plans....

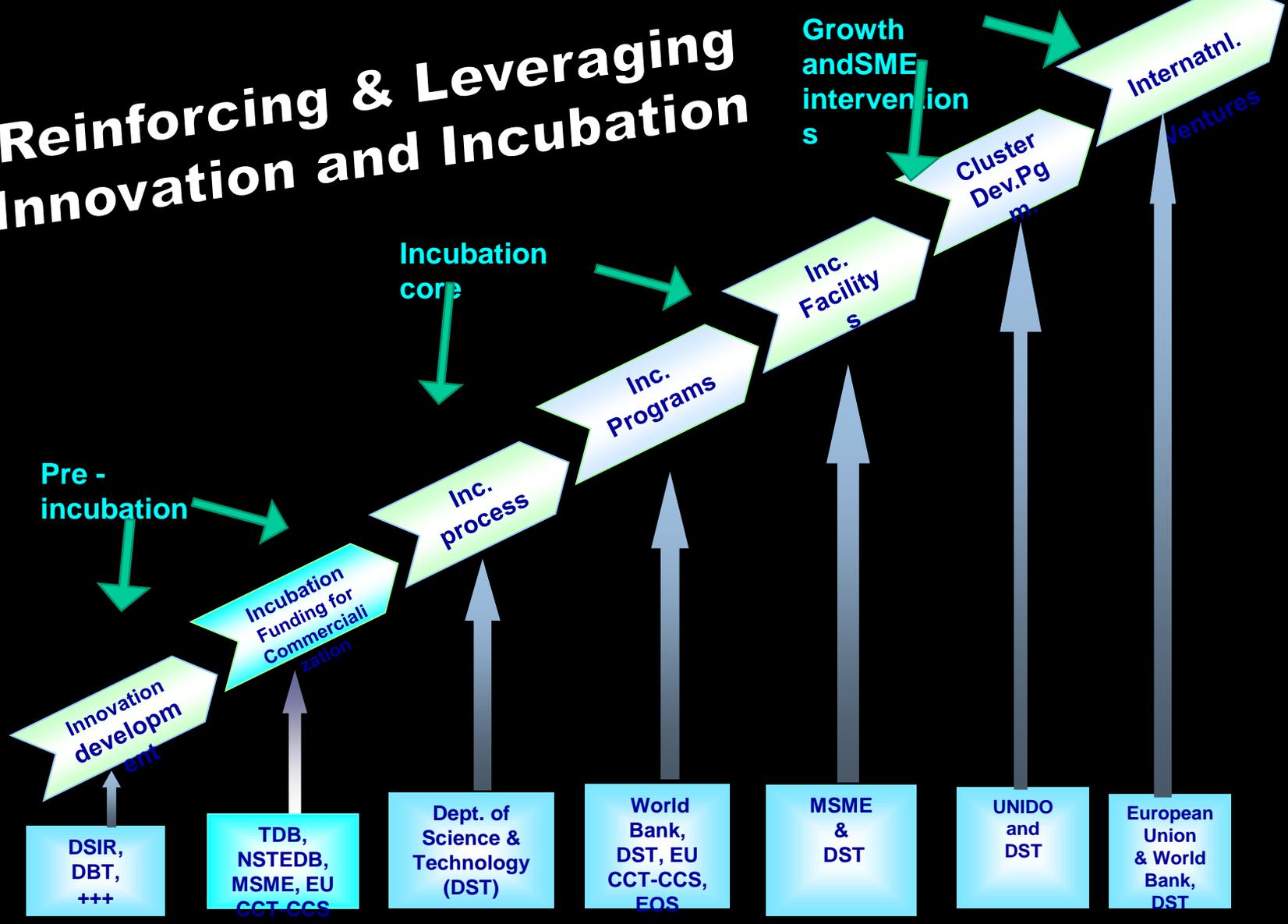
- **Solar Power-Hybrid Cold Storage units**
- **Bio-mass powered Cold Storage units**
from the waste of the farmers markets

thank you for your patience !

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www.trecstep.com

Reinforcing & Leveraging Innovation and Incubation



Retracing Growth



Winning Edge

- Science & Technology
- Innovation
- ICT enabled
- Entrepreneurship



- Capital
- Machinery
- Management



- Land
- Labour
- Natural Resources

Incubation *Process*



Farmers :

Selecting the Seed

Study the Climate

Timing the Labour

Ploughing

Watering

Manuring

Weeding

Harvesting

Happiness

Science Park / Incubator Managers :

Identification and mining of Entrepreneurs

Marketing ++ business Strategic Guidance

Technology Support and knowledge Access

Business Concept Development & Planning

Funding Options and Assistance

Incubation Place and Cultural Ambience

Growth Plans and Networking

Expansion and Globalizing