

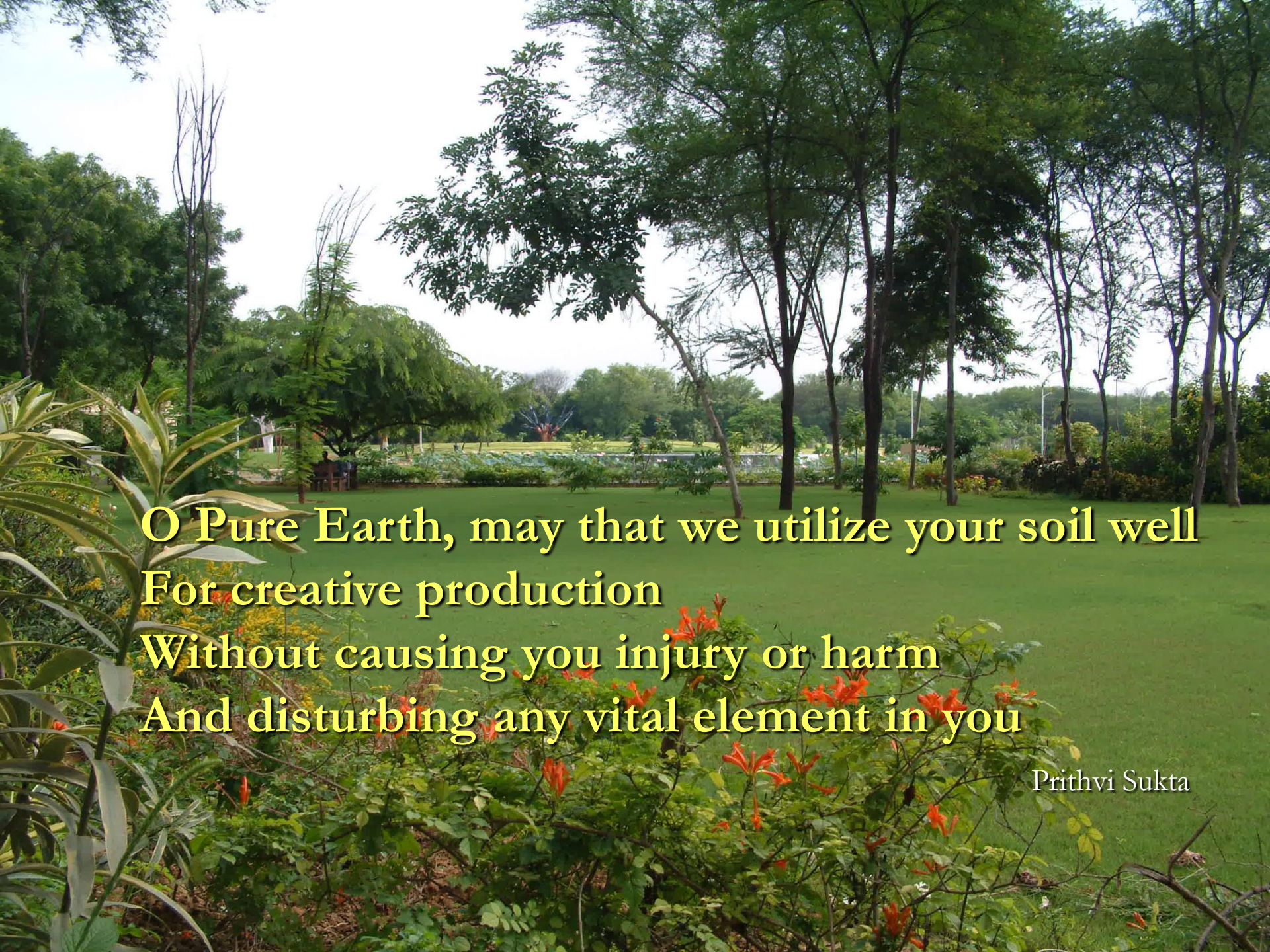
Small is Beautiful

How Goa University can and must Excel



Arvind P Kudchadker, PhD  
Professor Emeritus, IIT Bombay  
August 2011




A photograph of a lush green park. In the foreground, there are various plants, including a large green leafy plant on the left and a bush with bright orange flowers in the lower right. The middle ground is a wide, green lawn. In the background, there are several tall, slender trees with dense green foliage. The sky is overcast and grey.

O Pure Earth, may that we utilize your soil well  
For creative production  
Without causing you injury or harm  
And disturbing any vital element in you

Prithvi Sukta



# Goa University



We need to keep this as a running theme  
in whatever we do for Goa  
with a clear focus on sustainable development  
and self-renewal  
with every Goan and Indian as  
the ultimate beneficiary.

What could be a role for Goa University?

**Save Goa.**

# Excellence in Higher Education



## How To:

- ❖ Define excellence
- ❖ Measure excellence
- ❖ Recognize excellence
- ❖ Nurture Excellence
- ❖ Sustain excellence

Do we want to be excellent?

Too often we fail to recognize and pay tribute to the creative spirit.  
It is that spirit that creates Jobs.

Alfred Sloan

***Clear Strategy and Goals for excellence.***

# Centre of Excellence - Goals

Nobel Prize in 30yrs

Major impacts on Society

'World-Class' Institution

Bhatnagar awards

Paper in NATURE

Global Brand in 25 yrs

***Set Measurable goals consistent with Institution vision.***



# Nalanda – Global University



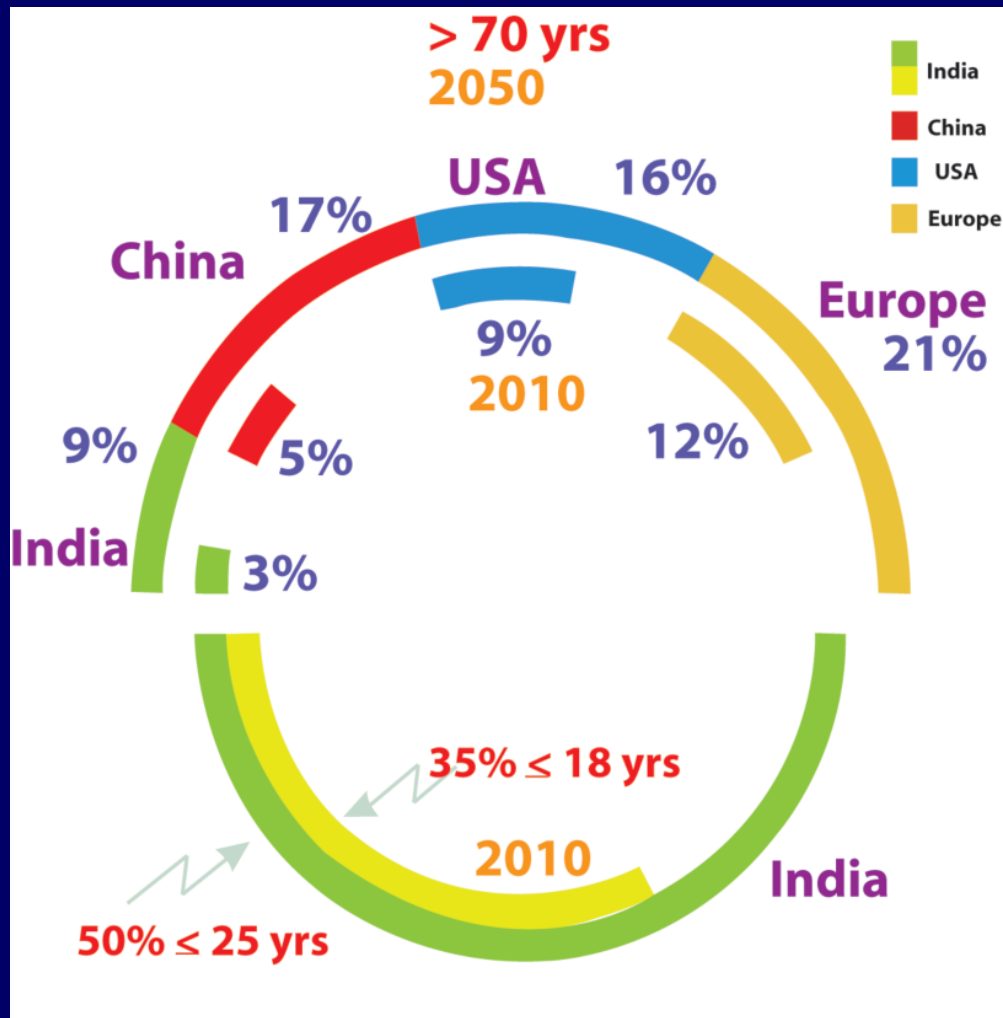
**2<sup>nd</sup>-12<sup>th</sup> Century AD**

**Nalanda – *Giver of Knowledge, Centre of Excellence***

- ❖ World's most ancient university, largest residential, international centre of learning
- ❖ 14 hectares (1,40,000 sq m, 35 acres)
- ❖ **2,000 Faculty**, 10,000 Students (1:5)
- ❖ Rigorous Admission Test; Merit-based admission; Rigour & Discipline
- ❖ Science, Literature, Logic, Fine Arts, Medicine, Yoga, Philosophy, Theology, Grammar, Astronomy, Mathematics
- ❖ Emphasis on **knowledge** and **practice** through Learning (**Free Discussions, Debates**) in classes
- ❖ Library in a 9 storied building

***What A vision in 2<sup>nd</sup> Century AD! Can we do better?***

# The Young India



Dependency Ratio =  
earners : pensioners  
deteriorates with aging

***Unleash tremendous potential through innovative policies and novel implementation strategies.***

# Exciting Times

Globalization



Industry moving ahead w/o Government

## ❖ *Increased Role for India*

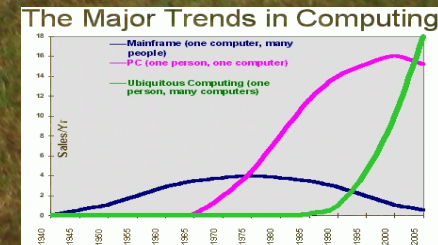
- ❖ IT, ITES, ICT
- ❖ Design, R&D Hub
- ❖ Clinical research
- ❖ Manufacturing Hub
  - automobiles, components, Jewelry, Pharma

- ❖ Healthcare, Energy, Water, Ecology
- ❖ Focus on:
  - ❖ Have-nots
  - ❖ Renewable
  - ❖ Management
  - ❖ Preserve

- ❖ Education
  - ❖ Quality + Quantity

Innovate or Obliterate

Technology Changing Rapidly



Vasudhaiva Kutumbakam.



# Globalization



**The GAP**

**Sustainable Development  
Emphasis on Have-nots**

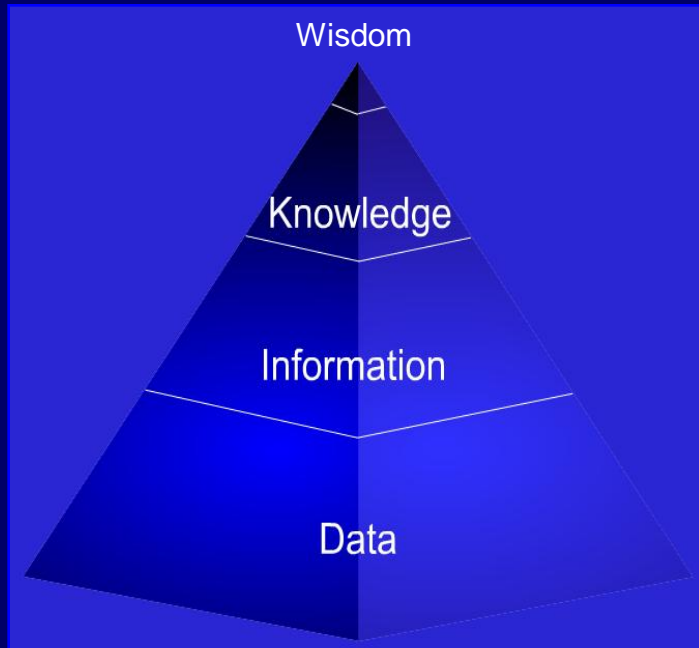
- ❖ Globalization:
  - ❖ Flow of Talent
  - ❖ Flow of Capital
  - ❖ Flow of Ideas

Brain Drain → Brain Bank → Brain Circulation

*Is Globalization reducing economic disparities?*

# Higher Education

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**The Student we educate today will be  
Inventor, Innovator,  
Change Agent,  
Wealth Generator, and  
Leader of the Future,  
for the well being of our citizens, through  
creation & transfer of knowledge.**

A Polymath

***Equip & nurture to face challenges of 21<sup>st</sup> century.***



# Goa University

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Among the top 10 Universities in India

A Leading Research-led Teaching Institution

With

Full Autonomy



USP of Goa

Create quality workforce for Goa, India, +

***Desire and drive for Excellence.***



# Some issues

Are we getting the best out of our faculty?

How do we attract motivated students (Goa + outside) for research?

How do we create active partnership with Industry, professionals?

Are we taking full advantage of liberal research funding from Government agencies?

Is it better to peak in a few areas and make an impact rather than spread thin in several areas?

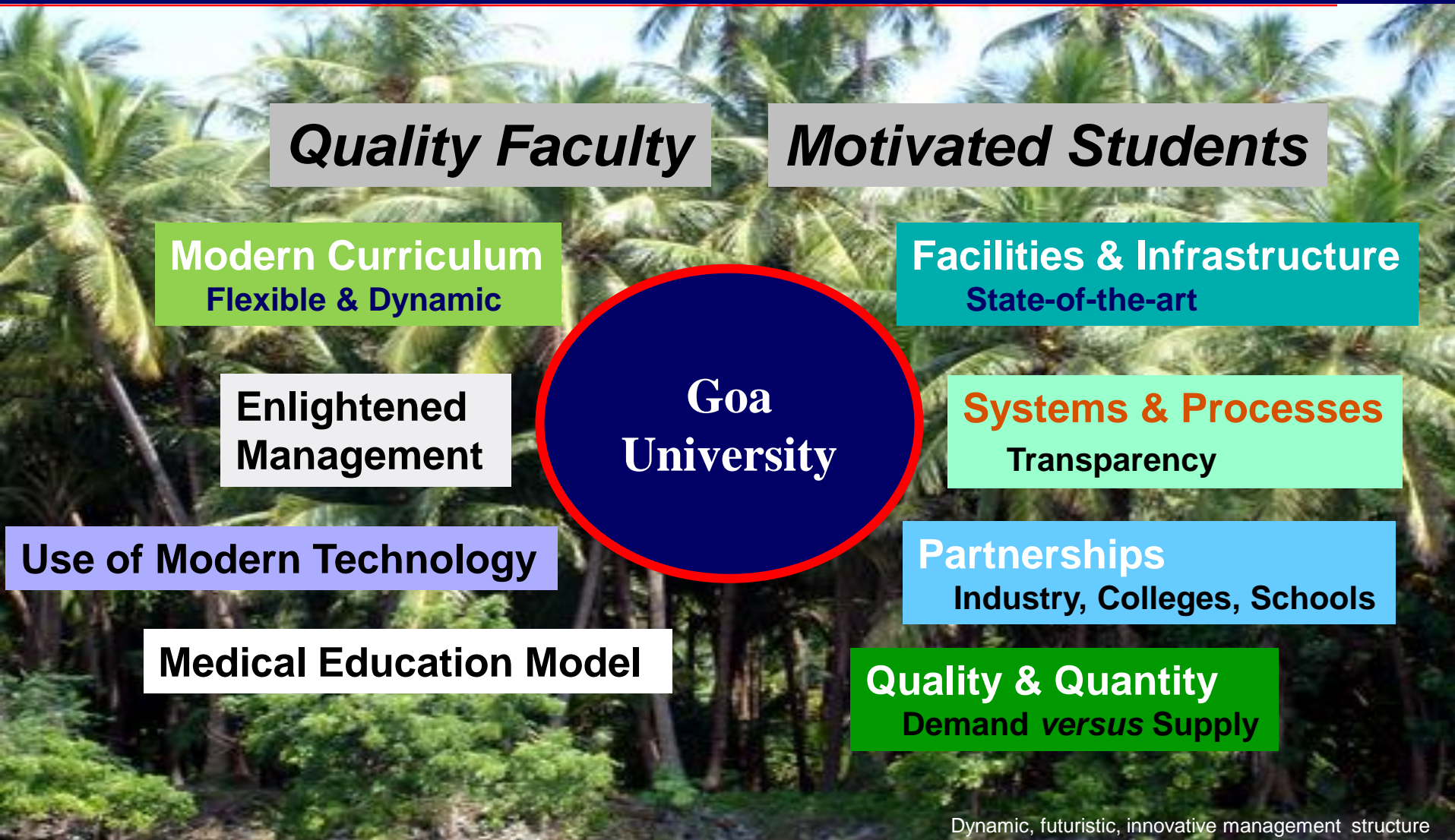
How to build better relationships with affiliated colleges?

Do we take advantage of our historical fact and explore aggressively 'Window to Europe'?

***Achieve excellence for Goa University.***

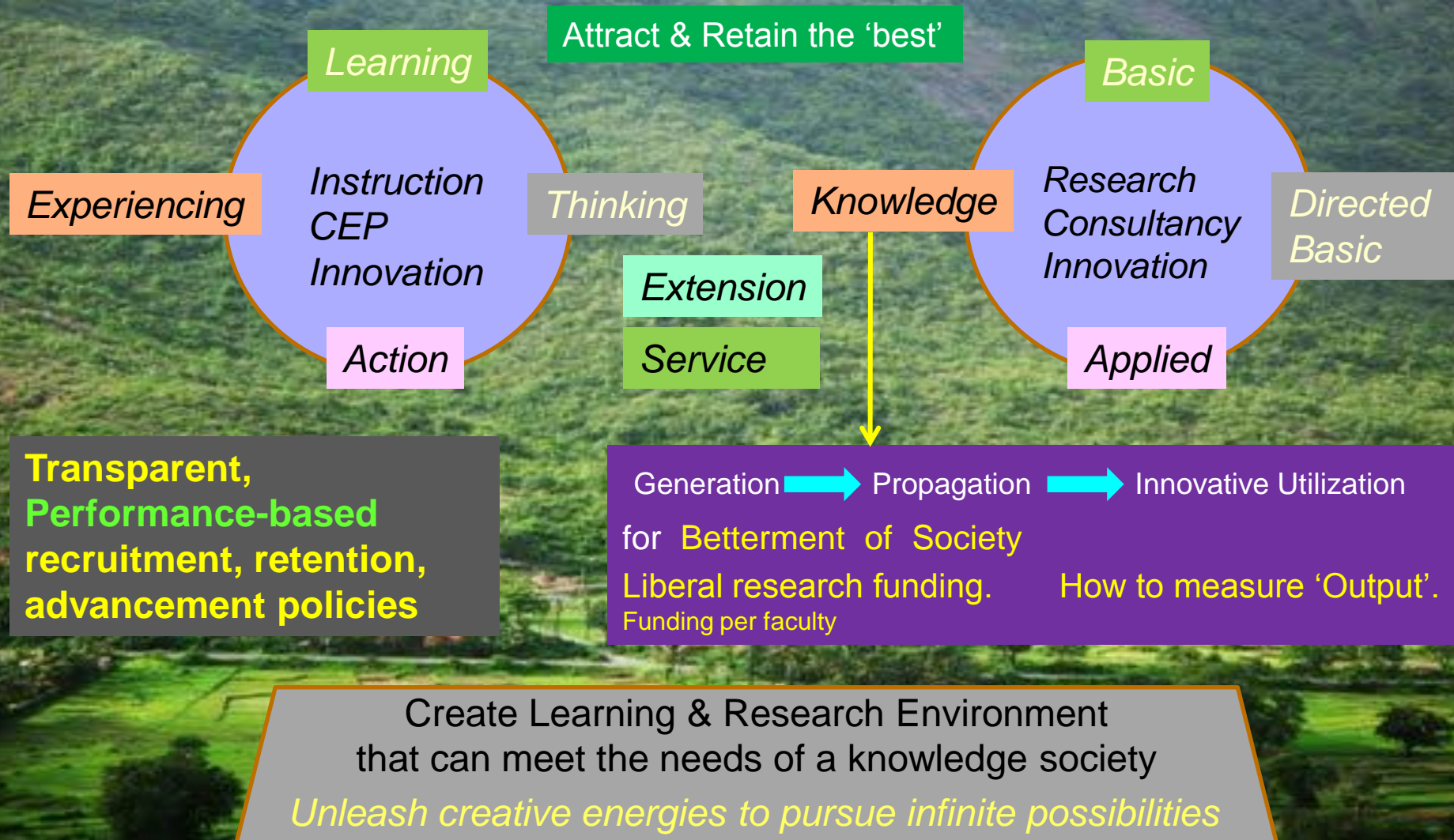


# The Parameters



**Create Nalanda of 21<sup>st</sup> Century.**

# Faculty



**Peak in a few areas, reduce GAP, make impact.**



# Goa University - Initiatives

## Centre for Academic Excellence & Leadership

- Innovative 'Teachers'
- High quality Researchers
- Academic Leaders
- Effective Staff

Mentor

## Centre for Good Governance & Policy

- Services
- Public issues

## Initiate a few Innovative programs

- Internships
- Design
- Virtual Reality
- Others

Window to Europe  
Historical Advantage  
Students & faculty  
exchange

Centre for  
Innovation  
Management  
(Industry + Academia +  
Govt. + Entrepreneurs)

Ideas to Innovation  
Focus on India-Specific problems

***Make a difference to Academia, Government, and Society.***

# Paradigm Shift in Education

Conceiving  
& Defining  
A Problem

*Systems Approach*

Designing  
Workable &  
Affordable  
Solution

*From*

Teacher-Centric

Job-centred

Individual Labs

Sage on Stage

Fixed Classroom environment

Training

*To*

Student-Centric Active Learning

Knowledge-centred

Integrated Labs

Guide on Side

Flexible Learning Environment

Internships

*Input*

Academia + Industry + Professional Bodies

*Output*

⇒ **Generalist–Specialist** (Scientist–Researcher–Manager)

⇒ **Better Conditioned Product.**



# Paradigm Shift

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**Be the change you want to see in the world.**

*Mahatma Gandhi*



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***Transformation in thinking needed.***

# Some 'instruction' issues

## Attendance in Classes & Tutorials

Compulsory  
Voluntary

## Use of Internet

Restricted  
Unrestricted

## Cheating

Ethics

## Evaluation

Assignments  
Projects  
Quizzes

## Tests

Mid-semester Exams  
End-semester Exam

Attention span, 15min!

*Think differently?*



# Quality in Higher Education

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It is the supreme art of a teacher  
to awaken joy in  
creative expression and knowledge



*Albert Einstein*



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*Tasmai Gurave Namah – Do we deserve?*

# Concerns

Are we getting the 'best' out of our faculty ?

If not:

Is it a system failure?

Expectations *versus* Delivery

Lack of research & innovation ecosystem

Is external motivation necessary?

Faculty defines & delivers - monitoring progress

Research funding from external agencies

Innovations in instruction, extension, service

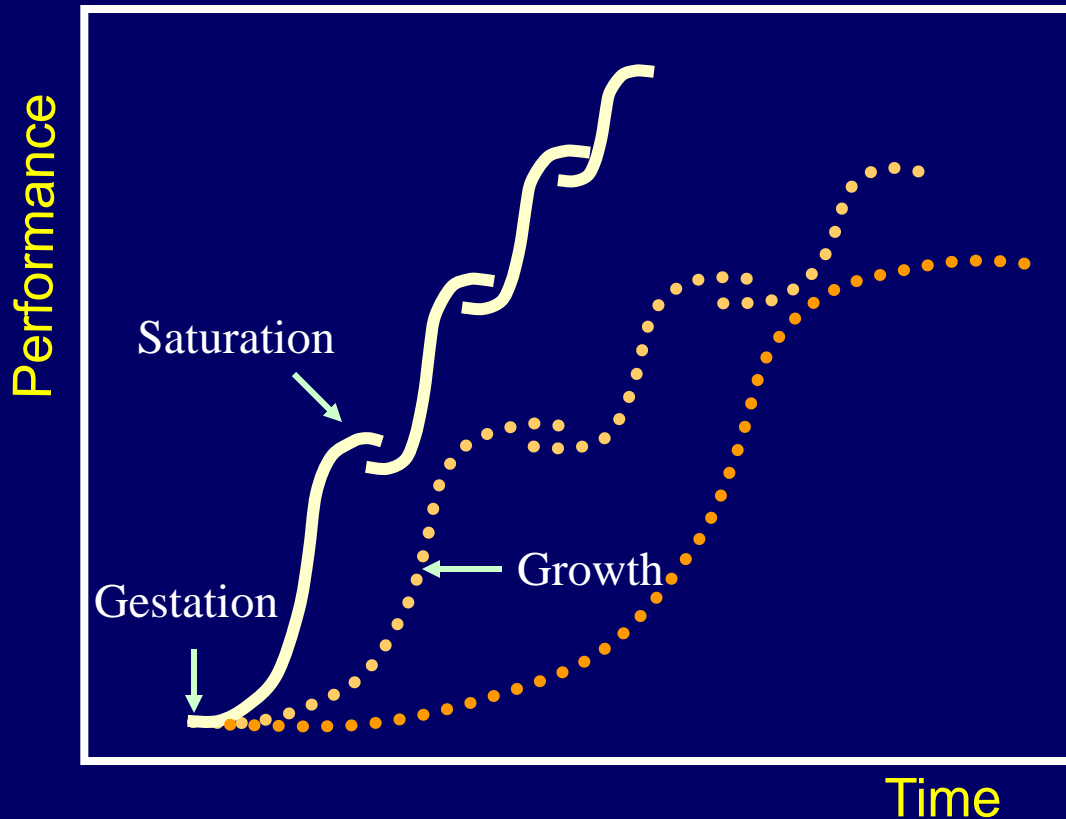
Multidisciplinary groups

***Performance-based evaluation policies.***



# The New Professional

## *Self-Learning*



- ❖ Short Learning Stage
  - ❖ Rapid growth Stage
  - ❖ Quick Transition to next S-Shaped Curve before decline
- ➡ Life-long learning

*Continuous Self-Renewal.*

# Main Features of Academic Programs

Thesis, Projects  
Seminars, Workshops  
Internships (Rural, Industry, Research)

HASS

Communication  
Team work  
Life-long Learning  
Ethical values

Management

Science Electives  
Open Electives  
Flexible Learning Path  
Credit System

'Tinkering' Lab  
Integrated, 'Open-  
ended' Science  
Lab  
Innovation project  
Hands-on Experience

Sciences, Design & Innovation, Economics, Logic, HASS, Ecology,  
Problem-Solving

***Holistic education and learning for Knowledge Society  
5-yr Dual Degree MSc, MA.***



# Industry – University Linkages



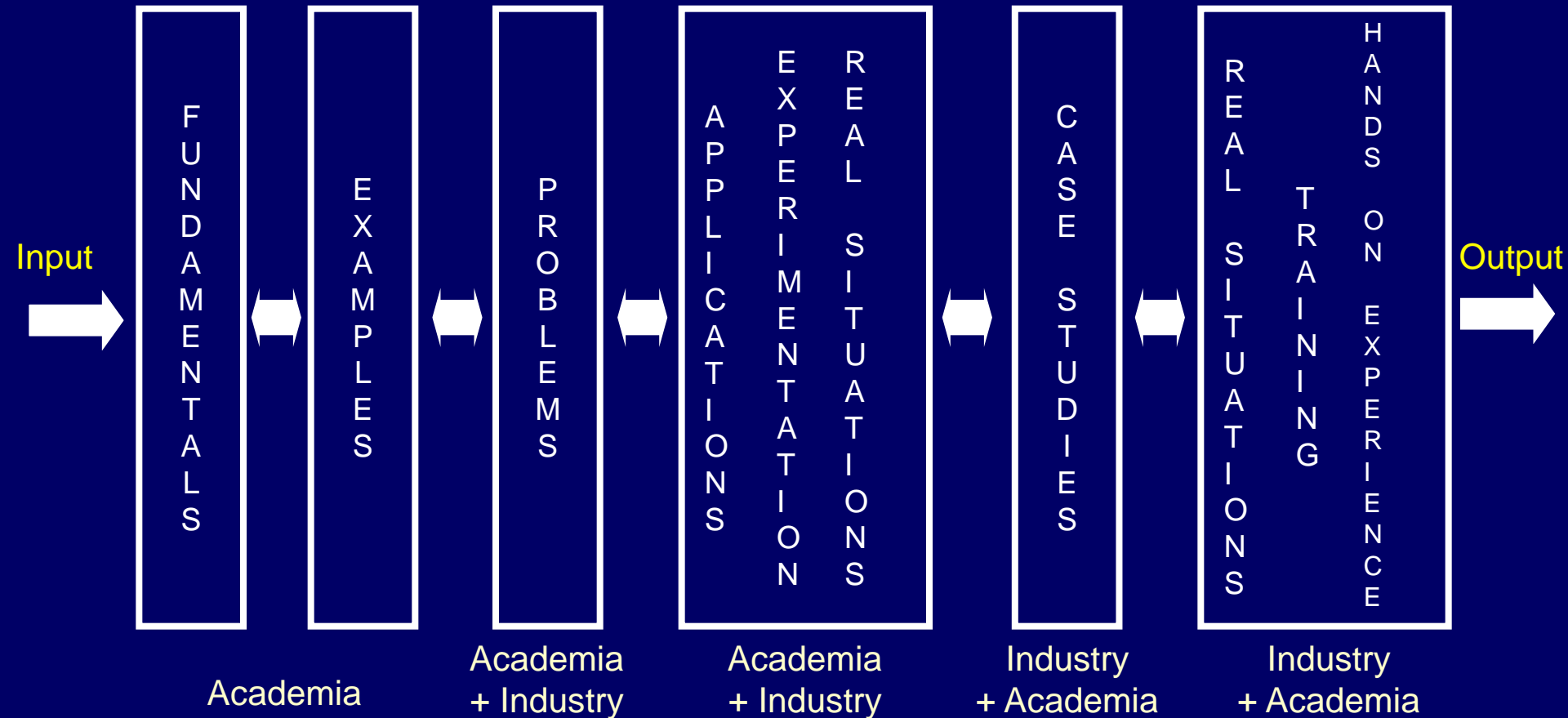
- Scientific Research
- Education
- **Continuous Needs**
- Better Equipment
- Better Resources

- Technology Oriented
- Need Innovators of Tomorrow
- Research from Institutions
- **Team-Teach Courses**
- **Live situations**

Joint Research Projects

***Vibrant & Dynamic Relationship – Invention + Innovation.***

# Academic Programs – Theory + Practice



⇒ *Fundamentals* are GLOBAL

⇒ *Applications* are LOCAL



# Universities in Goa




North Goa University

South Goa University

Fully Autonomous

Autonomous Colleges

*Create dynamic, flexible, better-managed Universities.*

The background of the slide is a photograph of a vast mountain valley. In the foreground, there are terraced fields on a hillside, some with green crops and others brown. A small village is visible in the valley. In the distance, there are layers of blue mountains under a hazy sky. The text is overlaid on this image.

“ We are responsible for what we are, and  
whatever we wish ourselves to be,  
we have the power to make ourselves  
so we have to know how to act ”

Swami Vivekanand

**Need Mindset Change**



# Mind Without Fear

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Where the mind is without fear and the head is held high;

Where knowledge is free;

Where the world has not been broken up  
into fragments by narrow domestic walls;

Where words come out from the depth of truth;

Where tireless striving stretches its arms towards perfection;

Where the clear stream of reason

has not lost its way into the dreary desert sand of dead habit;

Where the mind is led forward by thee into ever-widening  
thought and action---

Into that heaven of freedom, my Father, let my country awake.

# The Beginning

