

International Conference on Human Resource Development for Nuclear Power  
Programmes: Building and Sustaining Capacity  
13-16 May 2014, Vienna Austria

## Developing an Education Capability Assessment and Planning (E-CAP) Framework for Establishing National Educational Networks

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IAEA/NKM Section



### Article II:



*The Agency shall seek to accelerate and enlarge the contribution of atomic energy to **peace, health and prosperity** throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose.*



## NKM Programme Objectives

- to increase Member State understanding and application of nuclear knowledge management
  - development and dissemination of methodology, guidance and tools
  - implementation in national nuclear programmes
- providing knowledge management services and assistance



## Facilitating sustainable nuclear education

### Nuclear Energy Management (NEM) Schools

- 5<sup>th</sup> NEM School at ICTP in Trieste, Italy – Nov. 2014
- 3<sup>rd</sup> NEM School at U of Tokyo, Japan – June 2014
- Since 2010 trained over 150 nuclear lower or middle level managers and conducted schools in ICTP, Japan, UAE, USA etc.
- About 125 applications/yr, ~35 participants selected.

### Nuclear Knowledge Management (NKM) Schools

- 10<sup>th</sup> NKM School at ICTP in Trieste, Italy – Aug. 2014.
- Since 2004 trained over 300 young nuclear professionals.
- About 150 applications/yr, ~30 participants selected.





## Inter-linking Networks

- “Networking education should be further made more efficient by interlinking networks and sharing best practices on a global scale”

~SAGNE

- “We give high priority to assisting developing countries...”

~DG Statement, GC57

- “Access to modern science and technology is essential for achieving all of the Millennium Development Goals.”

- ~ President of the Conference GC57



Asia -- ANENT

Latin America – LANENT


Africa – AFRA-NEST

Inter-regional cooperation




















## INTERLINKING NETWORKS










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 **Asian Network for Education in Nuclear Technology**

**Established in 2004** as a regional partnership to cooperate in capacity building and HRD  
**The ANENT has 19 participating countries**, and 6 collaborating organizations.













Australia 	Bangladesh 	China 	India 	Indonesia 	Japan 	Jordan 	Korea 	Lebanon 
Malaysia 	Mongolia 	Pakistan 	The Philippines 	Sri Lanka 	Syria 	Thailand 	UAE 	Vietnam 
Yemen 								


ARCCNM 	ASNМ 	ENEN 	WNU 	MEPhI 	TOKYO TECH 
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 **LATIN AMERICAN NETWORK FOR EDUCATION IN NUCLEAR TECHNOLOGY**

**Established in 2011** as a regional partnership to cooperate in capacity building and HRD  
**The LANENT has 12 participating countries**

 Argentina	 Bolivia	 Brazil	 Chile
 Cuba	 Ecuador	 México	 Paraguay
 Peru	 Uruguay	 Belize	 Spain

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















**AFRA NEST**

## 1<sup>st</sup> AFRA-NEST General Assembly







26 to 30 August 2013, Arusha, Tanzania

AFRA-NEST (AFRA-Network for Education for Science and Technology) is established and empowered by AFRA Member States to implement AFRA strategy on Human Resource Development (HRD) and Nuclear Management (NKM)

Twenty-four African Member States were represented at the 1<sup>st</sup> AFRA-NEST GA with delegates from Universities, Research Institutes and Laboratories and National Atomic Energy Commissions  
Five collaborating organizations were also represented

 Burundi	 Cameroon	 Benin	 Burkina Faso	 Central African Republic	 Chad	 Egypt	 Ethiopia	 Ghana
 Cote d'Ivoire	 Kenya	 Madagascar	 Mali	 Malawi	 Morocco	 Namibia	 Niger	 Nigeria
 Sudan	 Tanzania	 Tunisia	 Uganda	 DR Congo	 Zambia			

**COLLABORATORS**

 IAEA	 enen	 ROSATOM	 NTEC Nuclear Technology Education Consortium	 KAERI	 IAEA
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### Cooperation Agreement among Regional Nuclear Education Networks

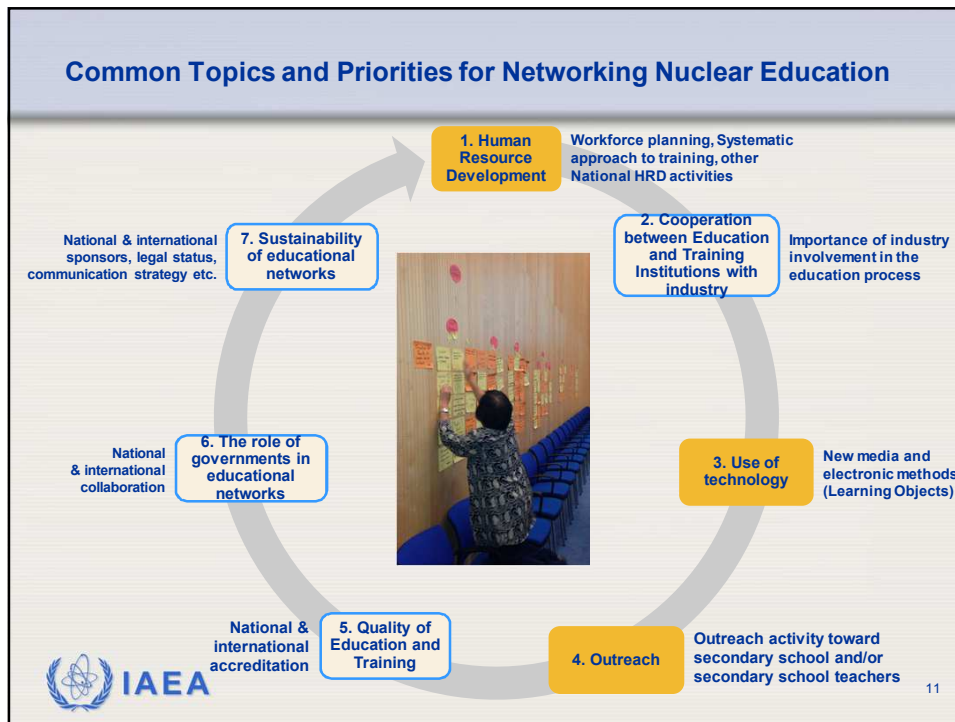
- During the 57th General Conference 2013, a Cooperative Agreement between Africa, Asia, Europe and Latin America was signed.
- Recently launched e-learning modules for new nuclear power programmes were introduced (supported by Korea EBC)
- Internet Reactor Laboratory** was demonstrated.



The CA was signed by:

- Mr S. Mallam (in picture)  
on behalf of Mr E. Akaho, Chairperson of AFRA-NEST
- Mr. H. Haditjahyono, Chairperson of ANENT
- Mr W. Ambrosini, President of ENEN
- Mr R. Barrachina, Chairperson of LANENT

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Background  
Knowledge marketplace  
Thematic areas  
National Networks

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## Background on AFRA-NEST

- Conceived at the AFRA Ministerial Conference held in Aswan in 2007.
- The main objectives of AFRA-NEST are
  - to facilitate the operation and networking of higher education, training and related research in Nuclear Science and Technology (NS&T) in the African Region, and
  - to foster sustainable human resource development and nuclear knowledge management,
  - to satisfy the needs of African countries with/without higher education and training, in the priority areas of non-power and power applications of nuclear energy.
- administered by a High Level Steering Committee,
- **The 1<sup>st</sup> General Assembly of AFRA-NEST was held in 26-30 August 2013, Arusha, Tanzania**



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## Knowledge Marketplace



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## Needs Offers



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## Prioritizing



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## Formed Working Groups



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## AFRA-NEST Thematic Areas



AFRA High Priority Areas

Management Topics

Working Group

## Recommendation of AFRA-NEST GA

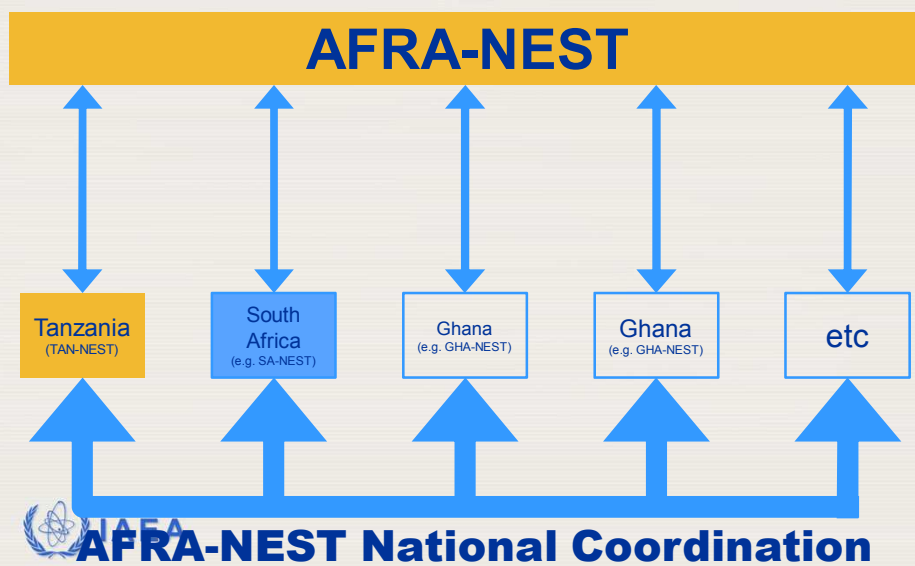
### Formation of National Networks to:

- Widening academic and industrial collaboration, knowledge transfer and outreach;
- Facilitating access to nuclear research facilities;
- Developing harmonized approaches for education in NS&T in Africa by establishing reference curricula and facilitating recognition of degrees.
- Implementation of National NESTs complement the work of the HLSC and AFRA-NEST at the regional level.

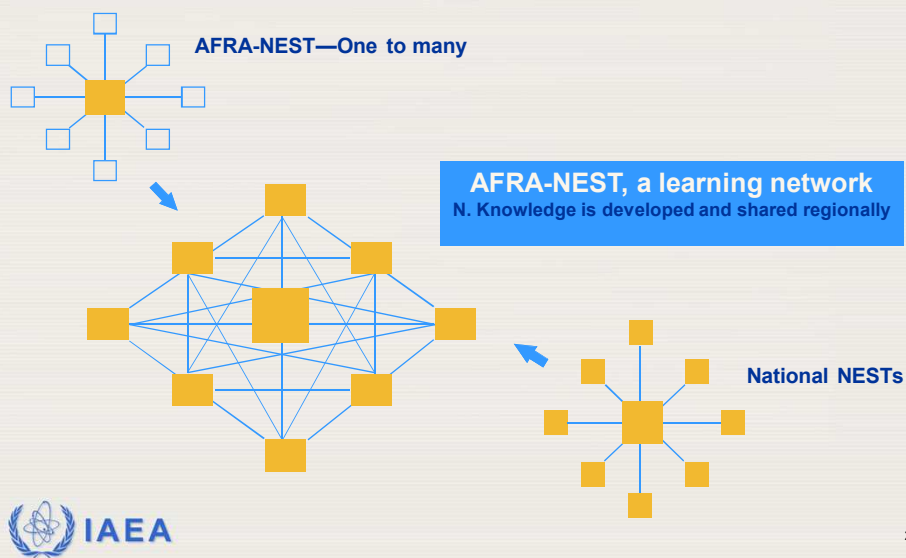


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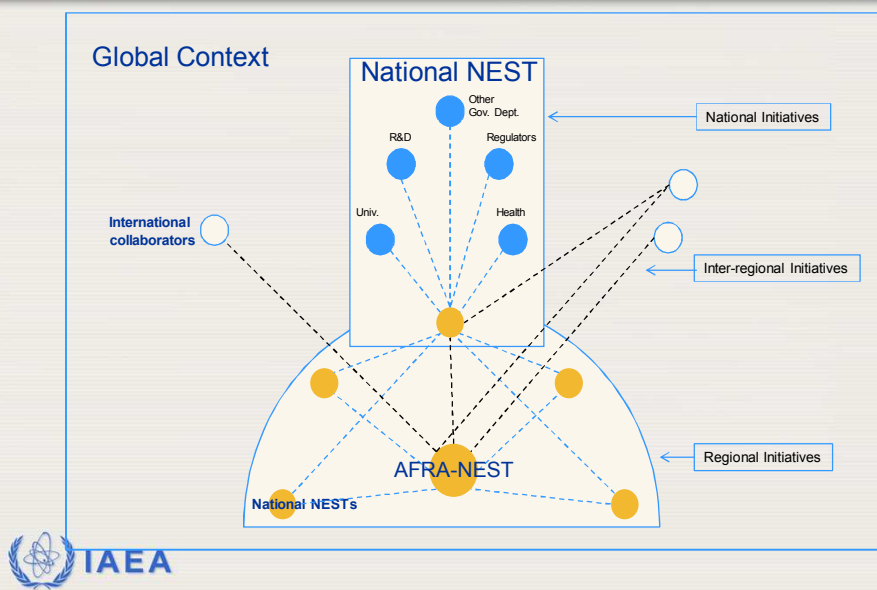
## Proposed AFRA-NEST Network Structure



## Emergence of an integrated Network of Networks



## AFRA-NEST, A Network of Networks



## Tanzania Network for Nuclear Education, Science and Technology (TAN-NEST)

Conclusions of the URT Consultative meeting on National Networks 2-6 December 2013, Arusha Tanzania

# TAN-NEST CONCEPT



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## Milestones for development of the TAN-NEST Concept



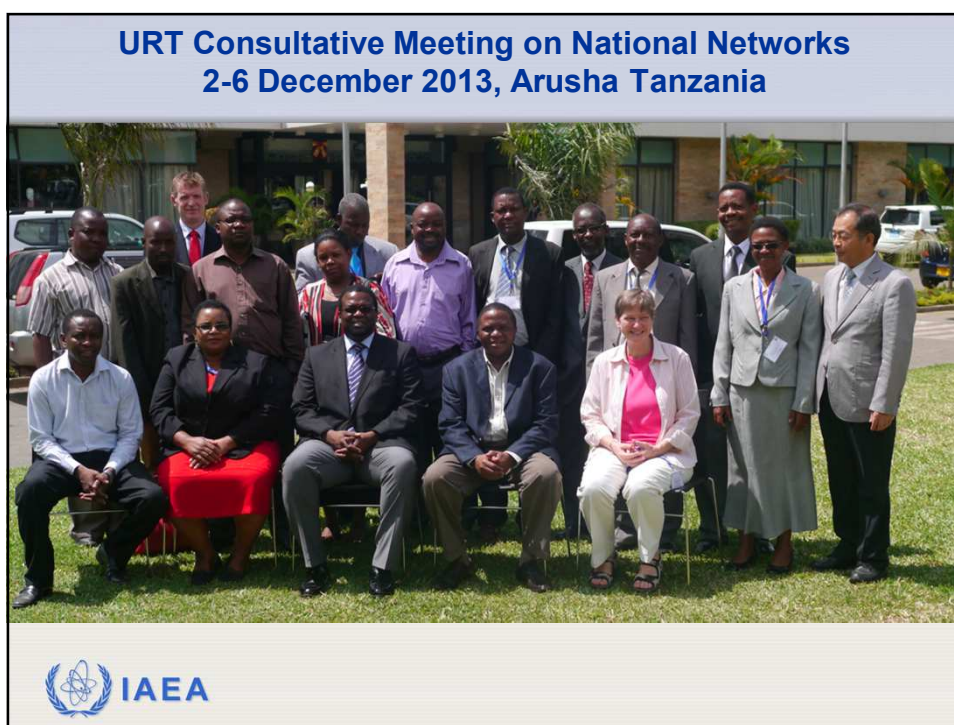
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## Knowledge Marketplace...

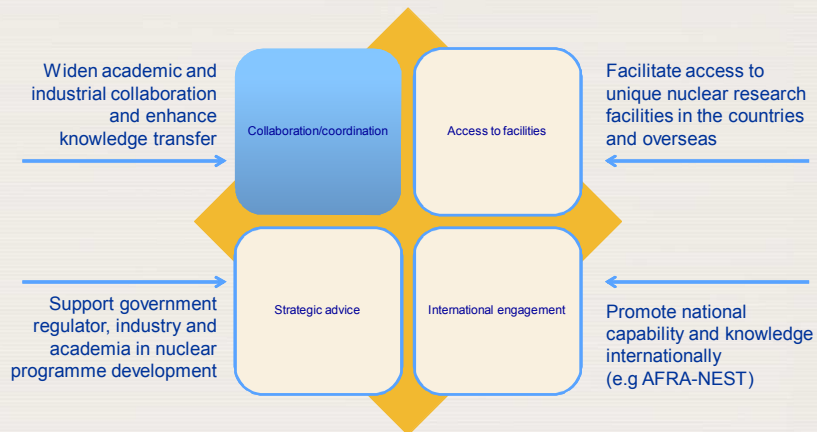


## Objective Tree Development...





## Strategic Objectives for establishing TAN-NEST



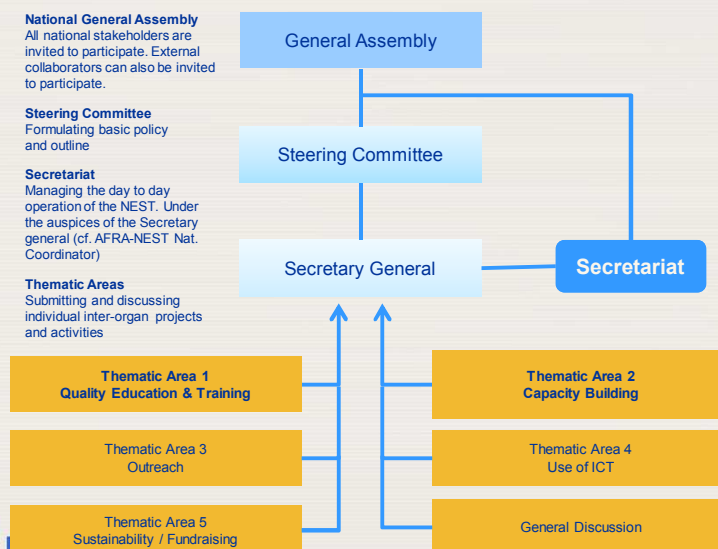
## [Proposed] Structure of a National NEST Based on the Tanzanian Nuclear Educational Network Concept (TAN-NEST)

**National General Assembly**  
All national stakeholders are invited to participate. External collaborators can also be invited to participate.

**Steering Committee**  
Formulating basic policy and outline

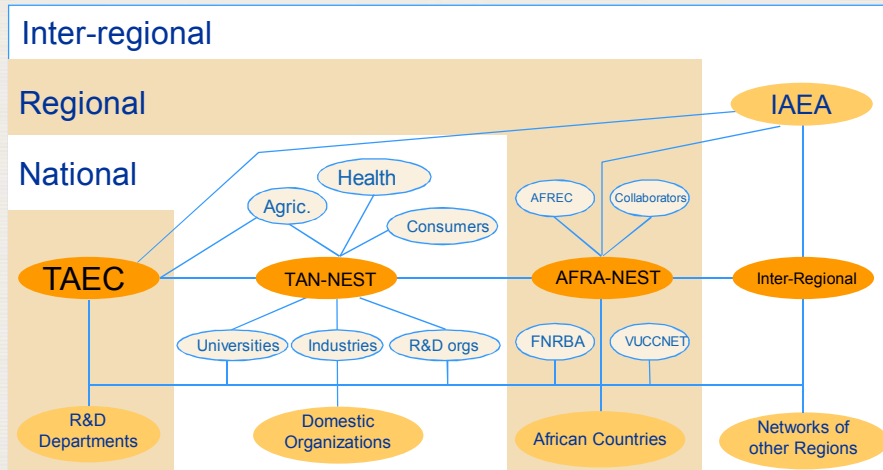
**Secretariat**  
Managing the day to day operation of the NEST. Under the auspices of the Secretary general (cf. AFRA-NEST Nat. Coordinator)

**Thematic Areas**  
Submitting and discussing individual inter-organ projects and activities



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## Tanzanian Nuclear Educational Network (TAN-NEST) Concept



Conclusions of the Consultancy Meeting on National Level Nuclear  
Education Capability Assessment and Planning (E-CAP)

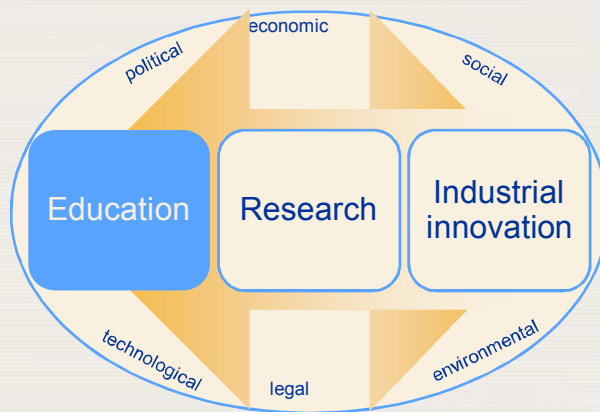
20-24 January 2014

## E-CAP FRAMEWORK



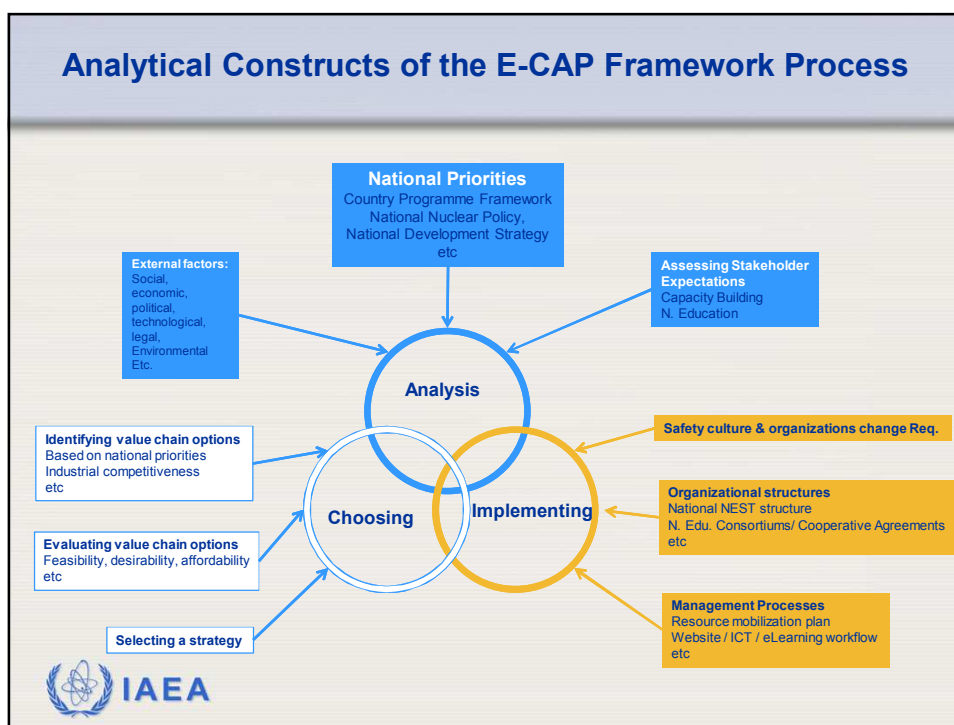
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## Elements of the E-CAP Framework

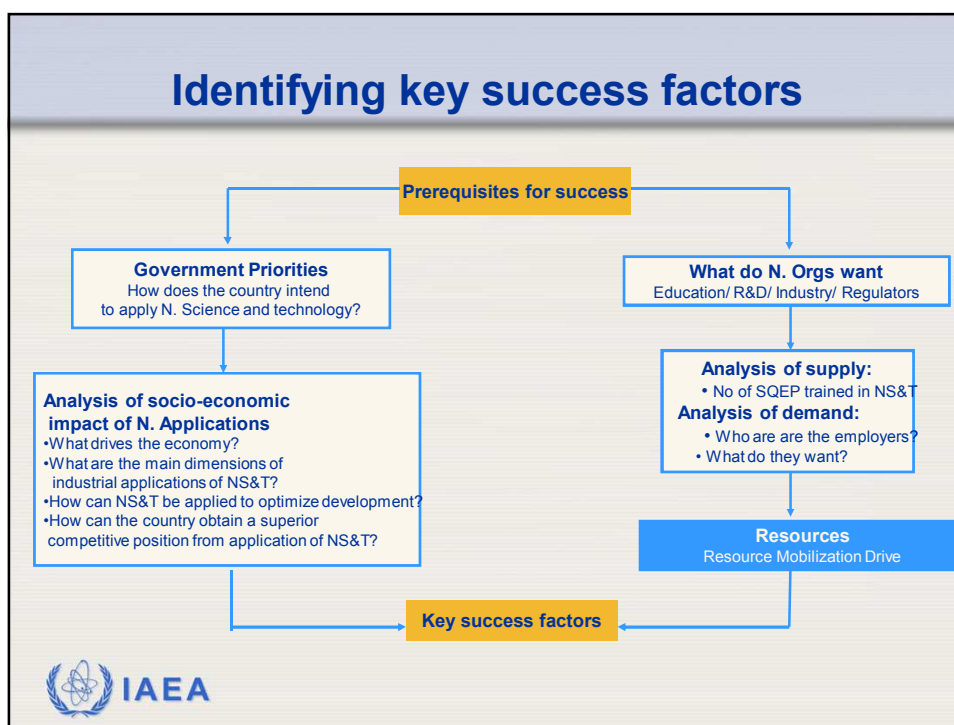
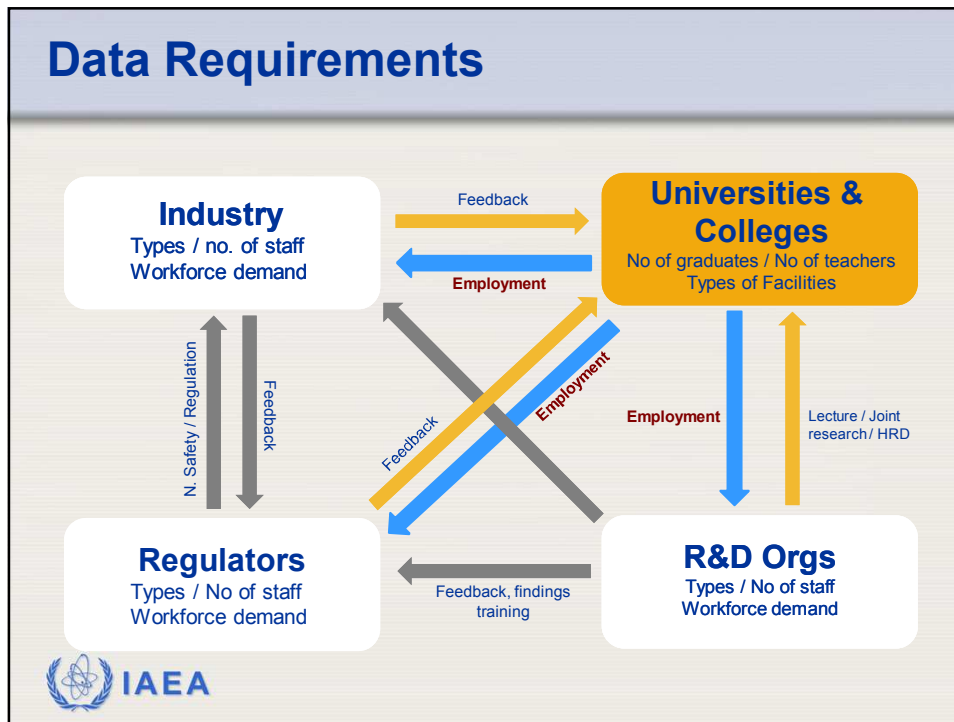


**E-CAP** are the processes through which nuclear knowledge resources (human, structural and social capital) are combined and co-ordinated to form strategic assets with potential to contribute towards sustainable development and industrial innovation within a particular macro context.









## Conclusions & Recommendations on E-CAP

### Analysis

- **Situation analysis:** matching supply and demand
- **Self assessment:** NKM self assessment tools

### Choosing

- **Industrial Policy (UNIDO):** Link NEST to industrial policy

### Implementation

- **NEST Champion:** selecting the “right” people
- **Employers of Nuclear personnel:** beneficiaries & customers
- **Seed money and resource mobilization:** Steering Committee
- **International Cooperation:** UNIDO, IAEA, UNESCO, other regional and national networks/institutions (ENEN, NTEC, KAERI etc)



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**E-CAP is like appreciating the whole mountain from far...**



## List of AFRA-NEST Meetings for 2014/2015

Events	Venue	Date
CS On National Nuclear Education Capability Assessment and Planning (E-CAP) Framework	Vienna	20-24 Jan 2014
AFRA-NEST ICT Development and Administration	Vienna	7-11 April 2014
Consultancy Meeting on Virtual Nuclear Management University (VNMU)	Vienna	28-30 April 2014
AFRA-NEST National Coordinators Workshop*	Nigeria	7-11 Jul 2014
AFRA-NEST Working Group Planning Workshop (HRD, RR, HH)	Vienna	24-28 Nov 2014
International Peer Review of NWU-KAERI e-learning courses for VNMU*	South Africa	February 2015
2 <sup>nd</sup> General Assembly	Zambia	May-June 2015

**Thank You**

