CAPACITY BUILDING
IN EARTH OBSERVATIONS
CONCEPTS AND METHODOLOGIES

José María Marcos
National Meteorological Institute (Spain)
GEO Capacity Building Committee Co-chair

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The giving a fish/teaching how to fish analogy
Some questions to start

• What is capacity?

• Capacity for whom?

• Capacity for what?

• Capacity building or capacity development?
What is capacity?

• Capacity is:
  
  – the ability of people, organisations and society as a whole to manage their affairs successfully (OECD)
  
  – the ability of individuals, institutions and societies to perform functions, solve problems, and set and achieve objectives in a sustainable manner (UNDP)
A COUNTRY’S CAPACITY RESIDES IN THREE LEVELS:

- **Individuals**
  - Knowledge, experience, skills, work ethics

- **Organisations/Institutions**
  - Connection of individual capacities
  - Framework to achieve common goals, with pooling of resources

- **Enabling environment**
  - Overall rules, policies and norms
  - Values
  - Priorities and Incentives

**A systemic approach for capacity**
Technical Capacities:

Those specific to a particular field (in GEO, those related to Earth Observations)

Cross-Cutting Capacities:

• To Engage in Multi-Stakeholder Dialogue
• To Analyze a Situation and Create a Vision
• To Formulate Policy and Strategy
• To Budget, Manage and Implement
• To Monitor and Evaluate
The goals of capacity building in GEO will be to strengthen the capability of all countries, in particular developing countries, to:

1. **Use** Earth Observation **data and products** (i.e. process, integrate, model, etc.) in a sustainable, repeatable manner (both space-based and *in situ* sensors), with results or outputs that are consistent with accepted Earth observing standards.

2. **Contribute** *in situ* observations to global networks, and access and retrieve relevant data from global data systems useful for *in situ* applications.

3. **Analyze and interpret** data (both *in situ* and space-based) to derive nationally, regionally and globally relevant information and provide decision-support systems and tools useful to decision-makers.

4. **Integrate** Earth Observation **data and information** with data and information from other sources for a comprehensive and holistic view and understanding of problems in order to identify sustainable solutions.

With a view on improving infrastructures, especially *in situ* observation networks...
• Building
  – Starting from the ground
  – With pre-defined plans, ideas and sequences
  – A technical process, leaded by architects

• Development
  – Progressive process, starting from current situation
  – A learning process, with “try and error” cycles
  – An individually owned, “social sciences” process
What is capacity development?

- Capacity development: process whereby people, organisations and society as a whole unleash, strengthen, create, adapt and maintain capacity over time.

Box 1. Capacity development in the 2005 Paris Declaration

The capacity to plan, manage, implement, and account for results of policies and programmes, is critical for achieving development objectives from analysis and dialogue through implementation, monitoring and evaluation. Capacity development is the responsibility of partner countries with donors playing a support role. It needs not only to be based on sound technical analysis, but also to be responsive to the broader social, political and economic environment, including the need to strengthen human resources.

Partner countries commit to:

- Integrate specific capacity strengthening objectives in national development strategies and pursue their implementation through country-led capacity development strategies where needed.

Donors commit to:

- Align their analytic and financial support with partners’ capacity development objectives and strategies, make effective use of existing capacities and harmonise support for capacity development accordingly.
# New paradigms in CD

<table>
<thead>
<tr>
<th>Current paradigm</th>
<th>New paradigm</th>
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<tr>
<td>Good policies and best practises externally prescribed</td>
<td>Good policies home-grown or customised (“best fit”)</td>
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<tr>
<td>Human resources development + institutional strengthening</td>
<td>Three layers: individuals, institutions and society</td>
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<td>Knowledge transfer (technical focus)</td>
<td>Knowledge acquisition (social focus)</td>
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<tr>
<td>Knowledge developed in the North and exported to the South</td>
<td>Local knowledge combined with knowledge acquired from other countries (North and South)</td>
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<td>Donors + recipients environment</td>
<td>Partnership environment</td>
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<td>Competition among actions (aid business environment)</td>
<td>Coordination and harmonisation of actions</td>
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The CD Cycle

UNDP Capacity Development Process Steps

Step 1: Assess Capacity Assets and Needs
Step 2: Define CD Strategies/Actions
Step 3: Define Progress Indicators
Step 4: Cost & Prioritise CD Actions
Step 5: Implement CD Strategies
Step 6: Monitor & Evaluate CD Strategies

Capacity Development Process
classical strategic framework

Strategic Framework for Capacity Building

Where are we now
(present condition)

Where do we want to be
(Vision, Mission)

How do we get there
(Strategy and Action)

How to stay there
(Sustainability)
• Systemic approach and country/region focus

• Endogenous processes (including assessment of endogenous capacities)

• Engagement of multiple stakeholders

• Results-based management approach

• Use the “glocal” approach

• Long term results: patience and sustained efforts
Some final recommendations for GEO CD strategy

• Don’t forget the “classics” (such as education and training)!

• Don’t forget the “environment”!

• Don’t forget the Information Society!

• Don’t forget any player!
Example of strategies helping create an enabling environment

• Establish “guidelines” to:
  – Assess national EO capacity
  – Develop and implement national EO plans and policies (a national EO strategy)
    • Identify national goals and priorities in EO
    • Align EO activities with national goals
    • Organise EO activities via multiple stakeholders involvement
  – Create incentives
    • Careers in EO
    • Use expert EO advise in national policies definition
    • Establish partnerships Government/Industry/Universities
Examples of ICT contributions

• IC Technologies facilitate:
  – Dissemination of information to the public
  – Creation of and access to Digital Information
  – Sources (both national, regional and global)
  – Distant education and training
  – Creation of knowledge and experts networks (communities of practise)
Players required in a robust CD strategy for EO

- Countries (Gvmnts), with their specific profiles and needs
- UN agencies and International organisations
- Education and Training institutions
- Aid organisations, Financial Institutions and Foundations
- Private sector (both for profit and non for profit)
- Academies and Scientific organisations
- Media
Successful development transformation affects not only what we do, but also how we do it...

in the end, successful development must come from within the country itself, and to accomplish this,

it must have institutions and leadership to catalyse, absorb, and manage the process of change, and the changed society.

Joseph E. Stiglitz (Prebisch Lecture, 1998)