Understanding and Improving Comparative Data on Science and Technology
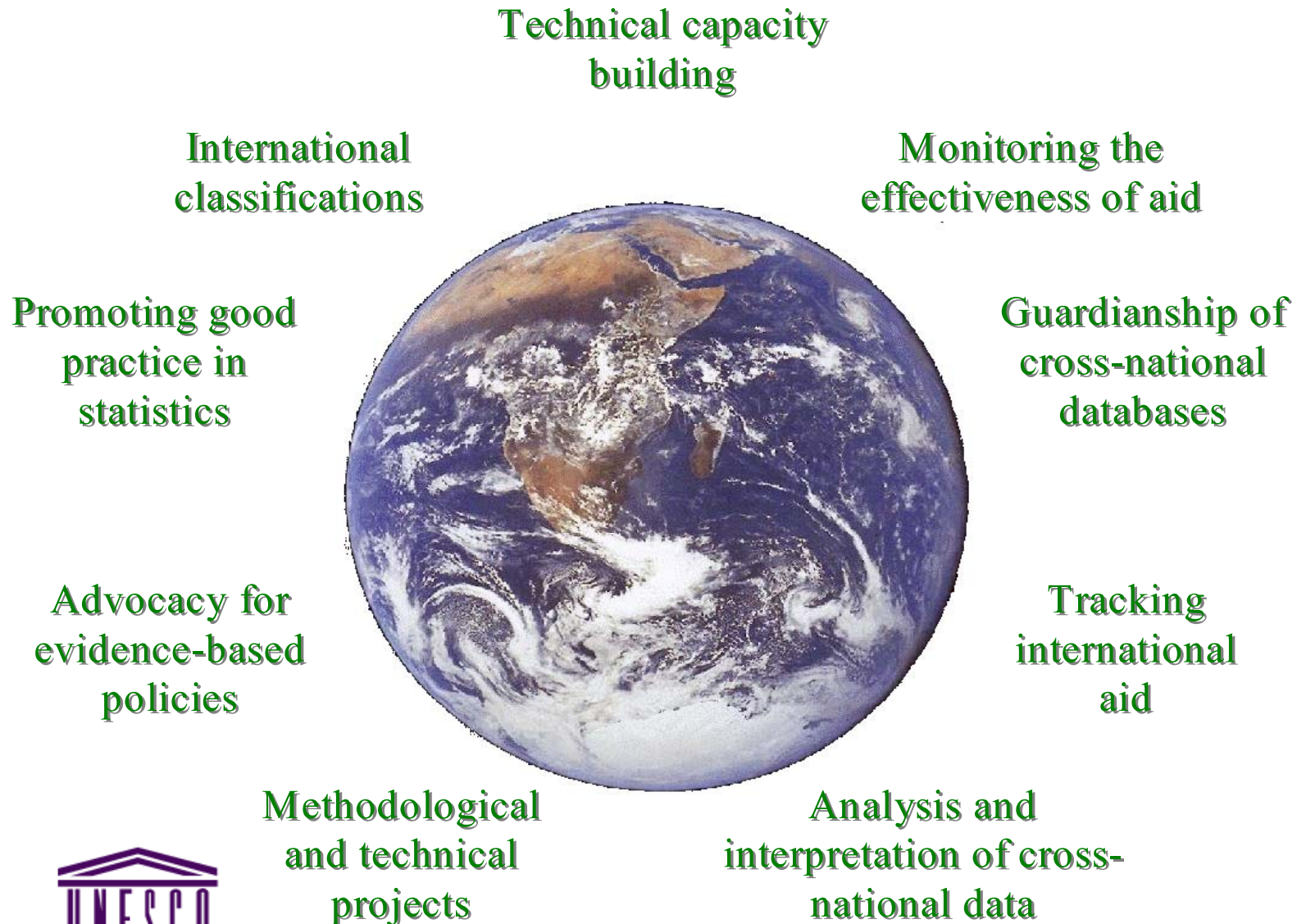
International Review of Science and Technology
Statistics and Indicators

Professor Denise Lievesley, UNESCO Institute for Statistics

UNESCO INSTITUTE *for* STATISTICS

UNESCO Institute for Statistics

- formally established in November 1999
- statutes and financial arrangements agreed by UNESCO General Conference
- relocated in Montreal in September 2001
- semi-autonomous body of UNESCO with own governing board
- receives a regular budget from UNESCO in a special account
- free to seek external work and funding

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The international statistician

Technical capacity building

International classifications

Monitoring the effectiveness of aid

Promoting good practice in statistics

Guardianship of cross-national databases

Advocacy for evidence-based policies

Tracking international aid

Methodological and technical projects

Analysis and interpretation of cross-national data

Functions of the UIS

collection and dissemination of cross-nationally comparable data on education, science, technology, culture and communications

technical capacity building within countries for users and producers of data

analysis and interpretation of international data (often in partnership with others)

special methodological and technical projects; conceptual development; establishment and maintenance of international classifications

The reasons for establishing the Institute

- To centralise statistical work in UNESCO
- To provide a focal point within UNESCO for relations with outside agencies, as 'lead' agency for education, science, technology, culture and communications
- To co-ordinate statistical capacity building activities in Member States
- To improve the quality and policy relevance of statistical systems
- To promote the evidence-based policy nationally and internationally

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« Government should promote the further development or setting up of national statistical services capable of providing sound data ».

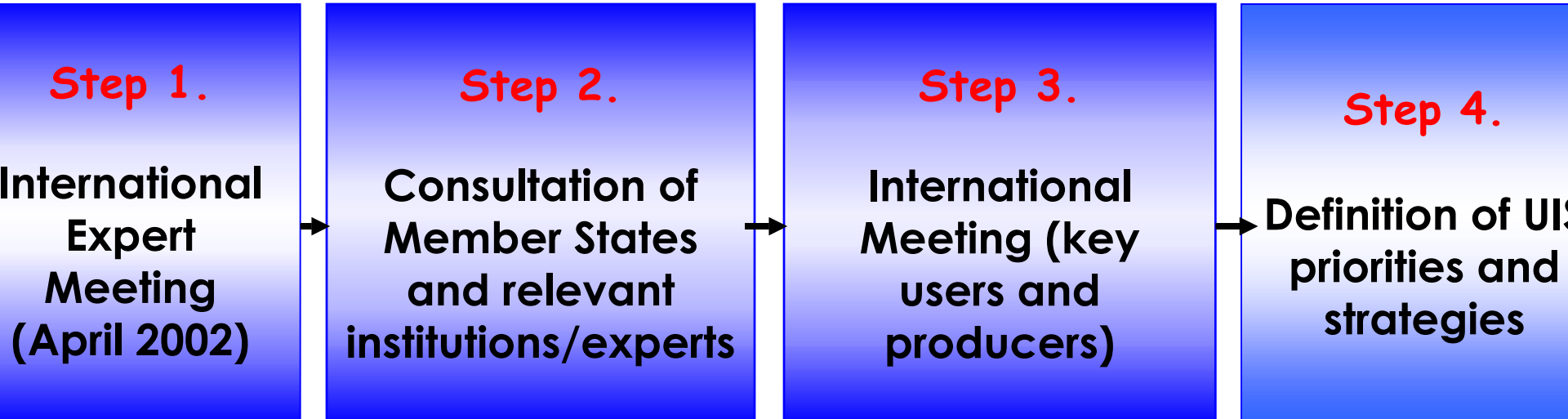**(* 'Declaration on science and the use of scientific knowledge')**

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Objectives:

- To review priority science policy information needs
- To examine existing S&T statistical and indicator systems
- To identify key areas for future development of S&T statistics
- To define the future role and strategy of the UIS

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UNESCO International Review of Science and Technology statistics and Indicators in the World

4 STEPS.

Step 1.	Step 2.	Step 3.	Step 4.
International Expert Meeting (April 2002)	Consultation of Member States and relevant institutions/experts	International Meeting (key users and producers)	Definition of UIS priorities and strategies

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Schedule

International Expert Meeting   2-5 April 2002 (Montreal)

Consultation of Member States   October-December 2002
and relevant institutions/experts

International Meeting   December 2002
(key users and producers)

Definition of UIS priorities   February/March 2003
and strategies

Example key areas of science policy issues**:**

1. Resources for S & T, brain drain

2. Adequacy of institutional and policy capacity and barrier

3. Output of S&T

4. Knowledge and technology transfer, diffusion and use
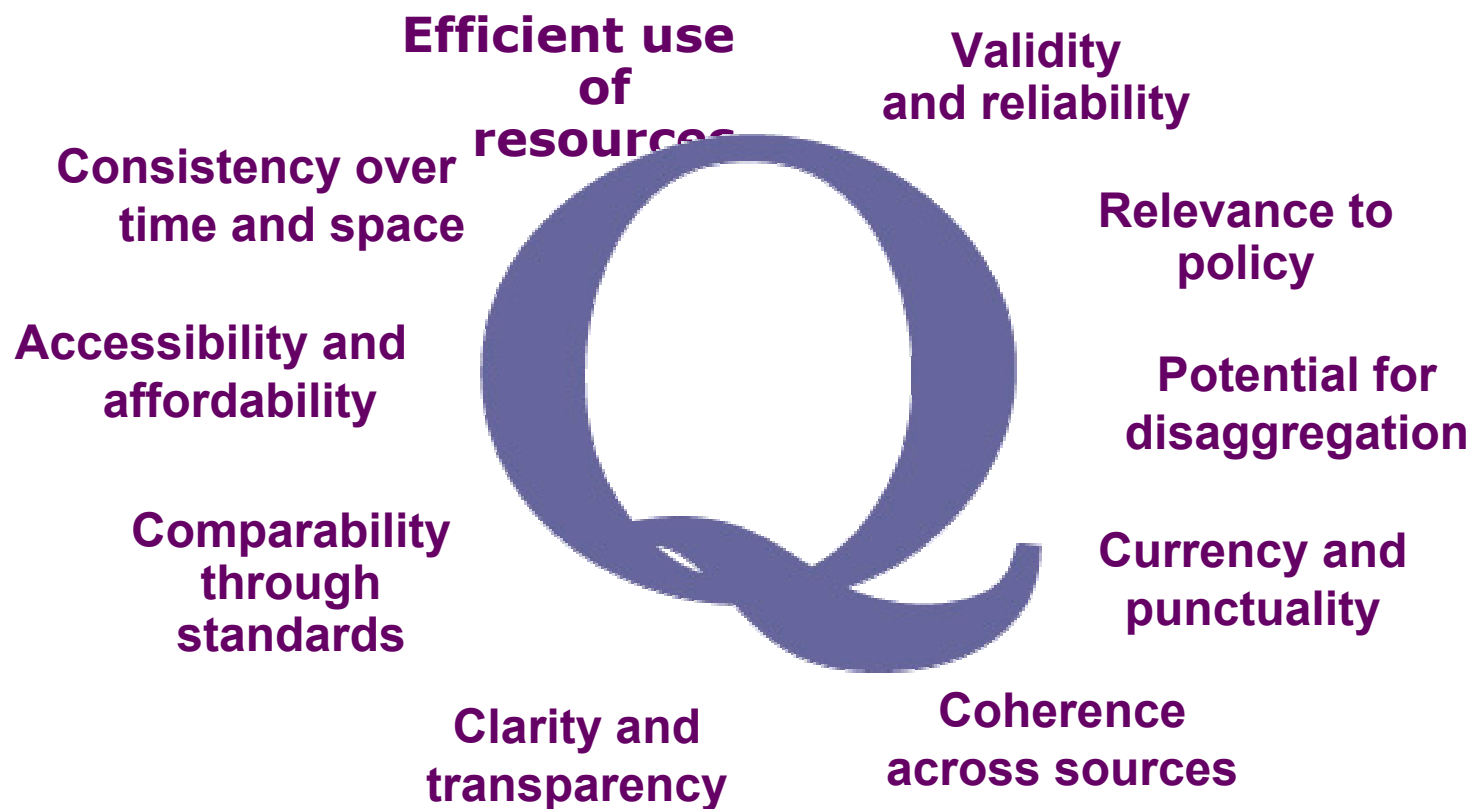
5. Impact of S&T (including ICT)

- To provide the global or regional picture
  - → for advocacy
  - → resource mobilisation (at global and regional level)
  - → accountability of governments
- For purposes of comparison
  - → learning from one another - to show what can be achieved
  - → benchmarking
  - → act as a catalyst for debate

Tension between nationally specific and cross-nationally comparable data

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Challenges facing us

- How to improve quality of data received from countries
- To build on the work of OECD, Eurostat etc (to meet the needs of both cutting and trailing edge countries)
- To balance the need for independent data of authority and country ownership
- To ensure the accountability of the international community too ?

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Quality of data

Efficient use of resources

Validity and reliability

Consistency over time and space

Relevance to policy

Accessibility and affordability

Potential for disaggregation

Comparability through standards

Currency and punctuality

Clarity and transparency

Coherence across sources

How to improve the quality of data received from countries

- Employ good practices
- Deliver information on data quality
- Adopt principle of 'no surprises'
- Share data
- Improve public confidence
- Consult countries
- Be temperate in data requests
- Identify key data needs
- Embed data requests in statistical capacity building
- Minimise revisions
- Engage in partnership

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How to improve the quality of data received from countries *contd*

- Show that data quality is taken seriously at UNESCO
- Enter into a dialogue about data which appear wrong
- Collect data in different ways
- Refuse to publish dubious data or publish with a footnote
- Promote international discussions on data quality
- Co-ordinate with other agencies and share meta data
- Get the data used

Sharing data

- Create a culture of data sharing
- Develop data policies – for *deliberate replication* against *ignorant duplication*
- Exploit investments in data
- Provide access to data
- Preserve data

Ensuring greater policy relevance of data we collect

- Analysis must be problem driven NOT data driven
- Partnerships required between UIS staff and policy experts
- Data must achieve a balance between long time series for benchmarking and flexible systems which can address current concerns
- We must also achieve a balance between country specific data and internationally comparable data
- Good meta data are vital

- Feedback loops are essential from user to producer

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Principles underpinning the work of the UIS...

- Data should not be collected for their own sake but because they are needed for policy purposes
- Countries should be fully involved in determining what data should be collected, with what frequency and how
- Response burden on countries should be minimised
- Co-ordination with other international agencies is paramount
- Methodology should be used which is appropriate to the circumstances
- Data collection requires resources, and expertise (*So the technical capacity building must be integrated with the data strategy*)
- Data are owned by countries and they should be assisted in making use of them
- Data should be collected and used in a way that is culturally sensitive

DISCUSSION

• How best can CODATA collaborate with the UIS in implementing an effective S&T statistics and indicators consultation of Member States and institutions/experts?

• In what way can CODATA be involved in the analysis of responses?

• What other inputs could CODATA and its members contribute to the Review?

- Welcome to talk to me or my colleagues
- Please visit the UIS (Thursday afternoon)
- Send comments to uis@unesco.org marked S and T indicators