

e-Learning on Digital Agriculture

Lecture 1. Introduction

PhD. Nargiza Nosirova

Overview

- DESD and agriculture
- Quality assurance in agriculture
- Developing a good quality training course
- Quality assurance in education
- Revisiting the good quality training course
- Making quality assurance work
- Quality assurance models in education
- The CGIAR and quality assurance in AET
- DESD and quality assurance

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The T'ikapapa initiative

The image shows a screenshot of the CAPAC PERU website. At the top, there is a banner with the CAPAC PERU logo and the text "CADENAS PRODUCTIVAS AGRICOLAS DE CALIDAD". Below the banner is a navigation menu with the following items: Inicio, CAPAC PERU, Marcas Registradas, InfoPapa, Servicios, Contáctenos, and SIPAPA (marked as "NUEVO").

On the left side, there is a green ribbon that says "NOVEDADES Click Aquí". Below this is a large CAPAC PERU logo with the text "CADENAS PRODUCTIVAS AGRICOLAS DE CALIDAD".

In the center, there is a list of links:

- [¿Qué es CAPAC PERU?](#)
- [¿Cómo nace CAPAC PERU?](#)
- [Visión de CAPAC PERU](#)
- [Estructura de CAPAC PERU](#)
- [Ventajas de ser socio de CAPAC PERU](#)
- [Requisitos para ser socio de CAPAC PERU](#)

On the right side, there is a blue sidebar with the following elements:

- Sección Asociados (with a person icon)
- Ingreso (button)
- Contenido (button)
- Asociados de CAPAC PERU (button)
- Instituciones colaboradoras (button)
- Usuarios de la marca "Mi Papa" (button)

At the bottom of the sidebar is the "Mi Papa" logo, which features a stylized potato and the text "SELECCIONADA Y CLASIFICADA".

Quality standards for sustainable agricultural research and education

The T'ikapapa initiative

Linking small scale farmers from the Andean highlands in Peru to new urban markets, taking advantage of potato biodiversity and tap into new market opportunities

WORLD CHALLENGE 08
In association with

Home | Nomination | Entry Rules | Competition Timeline | Judges Panel | **Post Competition** | Discussion Board

2007 Finalist Projects

POTATO GOLDMINE
T'ikapapa - PERU
T'ikapapa, based in Peru, beat nearly 1000 other projects from around the world to win World Challenge 2007.

The farmers of Peru's high Andes are among the poorest in the country, with an average income of under US\$1 per day. However, these farmers are sitting on a potential goldmine, as the region is home to three thousand varieties of potato. These native strains bear little resemblance to the regular potato, as many are brightly coloured - inside and out - and strangely shaped, but are packed with vitamins and are organically grown.

T'ikapapa was set up to bridge the gap between the Andean farmers and the potato

seed initiative | about | awards | contact & media

seed awards

2007 Award winners

Presenting the 5 winners of the 2007 Seed Awards:

- See also: 2005 Award Winners
- Applying for an award
- Vietnam

In Vietnam, Bridging the Gap uses sustainable cultivation of traditional medicinal plants to develop high value added products, the manufacturing and proceeds of which improve the livelihoods of ethnic minority communities.

● See more

- Peru

Key issues/problems/challenges (1)

- Lack of international policy or academic consensus on what counts as “quality” in (ecologically sustainable) agricultural research, education, training and capacity-building.
- Lack of clear policy or high level academic dialogue forums on ecological or agricultural sustainability issues in quality education debates or agreements to date.
- Questions/concerns about current subjectivity (political, corporate) with lack of scientific certainty and unclear objectivity (scientific or pedagogical contents/processes) in empirically defining or measuring quality.
- Debates with some preliminary policy, corporate or academic documents pointing to sustainability goals standards and action. (But policy incoherence, and lack of shared/uniform implementation).
- Sustainable agriculture education (academic courses, degrees, etc.) including agro-ecology, food systems, etc. is an emerging and growing academic field.

Key issues/problems/challenges (2)

- However, there is a decline in the integrity and independence (including threats to academic freedom and human rights violations) of public sector higher education.
- Globalization across the education sector is increasing pressures toward privatization while private/industrial training backed by private interests, money, and foundations guiding research goals.
- No clear political mandate or shared academic vision to support quality public research or education in sustainable agriculture (either in curriculum content, through scientific peer-review processes, institutional accreditation mechanisms, or program evaluations).
- Continued tensions/conflicts between
 - industrial, chemical, biotech, GMO and export-led agriculture models (with associated corporate business training and research needs/demands) and
 - local, organic, small farmer, subsistence approaches to academic studies/educational content (with different perspectives on quality learning needs, ethics, human rights, farmers' rights, indigenous rights, labour quality, agro-ecology, and environmental/social sustainability).

Quality dimensions

- “The goal...is to **integrate the principles, values, and practices of sustainable development into all aspects of education and learning.** This educational effort will encourage changes in behaviour that will create a more sustainable future in terms of environmental integrity, economic viability, and a just society for present and future generations.”
(<http://www.unesco.org/education/desd/>)
- As UNESCO notes
“EFA and the MDGs introduced the concept of quality education into their goals and international development targets. Providing any education, regardless of quality, is not the goal. A myth exists that access must come before quality. Both can occur simultaneously. **A large debate continues about what a quality education is.**”

UNESCO Quality perspectives (1)

- “At this point in time, quality education has essential characteristics that can be implemented in many culturally appropriate forms. Quality education:
- supports a rights-based approach to all educational endeavours. Education is a human right, and therefore quality education supports all of the human rights;
- is based on the four pillars of Education for All – learning to know, learning to do, learning to live together and with others, and learning to be (Delors et al., 1996);
- views the learner as an individual, a family member, community member, and a global citizen and educates to create individual competency in all four roles;
- upholds and conveys the ideals of a sustainable world – a world that is just, equitable, and peaceable, in which individuals care for the environment to contribute to intergenerational equity;

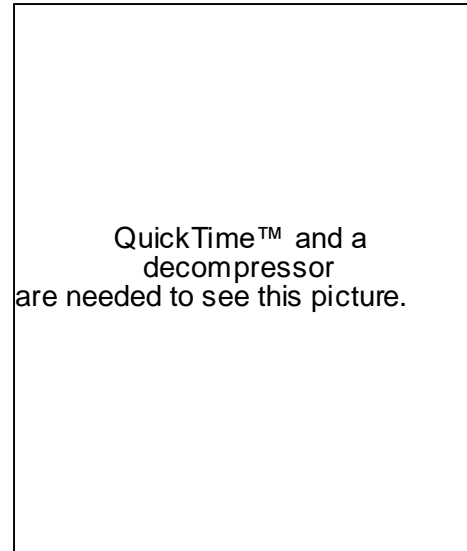
UNESCO Quality perspectives (2)

- takes into consideration the social, economic, and environmental contexts of a particular place and shapes the curriculum or programme to reflect these unique conditions. Quality education is locally relevant and culturally appropriate;
- is informed by the past (e.g. indigenous and traditional knowledge), is relevant to the present, and prepares individuals for the future;
- builds knowledge, life skills, perspectives, attitudes and values;
- provides the tools to transform current societies to more sustainable societies;
- is measurable.”
- (from: **United Nations Decade of Education for Sustainable Development 2005-2014: International Implementation Scheme, ED/DESD/2005/PI/01, p. 27**)

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Dimensions of food quality



Quality

ability of a set of inherent characteristics of a product, system or process to fulfill requirements of customers and other interested parties (ISO 9000:2000)

Dimensions of food quality



Quality assurance in agriculture

Codex Alimentarius (FAO & WHO)

A collection of food standards, codes of practice, guidelines and other recommendations

The screenshot shows the homepage of the Codex Alimentarius website. At the top, it features the text 'FAO/WHO Food Standards' and 'ENGLISH | FRANÇAIS | ESPAÑOL'. The main header is 'CODEX alimentarius', with the FAO and WHO logos to its right. Below the header is a navigation bar with 'ABOUT CODEX', 'MEETINGS AND EVENTS', and 'OFFICIAL STANDARDS'. A central banner displays the word 'Welcome' and a row of five images representing various food products: citrus fruits, fish, vegetables, bananas, and eggs. The main content area on the left contains a paragraph about the Codex Alimentarius Commission's history and purpose. Below this is a yellow box titled 'NEWS' with a sub-heading 'CAC 31st SESSION' and two paragraphs of text. On the right side, there are two sections: 'RELATED CODEX LINKS' with a list of organizations and activities, and 'EXTERNAL LINKS' with a list of external organizations.

FAO/WHO Food Standards

ENGLISH | FRANÇAIS | ESPAÑOL

CODEX alimentarius

ABOUT CODEX MEETINGS AND EVENTS OFFICIAL STANDARDS

Welcome

The Codex Alimentarius Commission was created in 1963 by FAO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme. The main purposes of this Programme are protecting health of the consumers and ensuring fair trade practices in the food trade, and promoting coordination of all food standards work undertaken by international governmental and non-governmental organizations.

NEWS

CAC 31st SESSION

The provisional agenda to the 31st session of the Codex Alimentarius Commission is now available in:
[English](#), [French](#), [Spanish](#), [Arabic](#) and [Chinese](#).

The Provisional list of Documents of the 31st session of the CAC can be found under the "Forthcoming Codex Meetings" webpage.

RELATED CODEX LINKS

- JECFA
- JMPR
- JEMRA
- Biotech assessment
- Expert consultations
- FAO/WHO trust fund for participation in Codex

EXTERNAL LINKS

- WTO
- OIE
- IPPC
- IPFSAPH
- STDF

Quality assurance in agriculture

Codex Alimentarius (FAO & WHO)

QuickTime™ and a
decompressor
are needed to see this picture.


Good Agricultural Practices (FAO)

An international regulatory framework and associated codes of practice to minimize or prevent the contamination of food

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS helping to build a world without hunger

GOOD AGRICULTURAL PRACTICES

Home | **FAO Activities** | FAO Resources | Links | العربية | 中文 | English | Français | Español



INTRODUCTION

What are Good Agricultural Practices?

A multiplicity of Good Agricultural Practices (GAP) codes, standards and regulations have been developed in recent years by the food industry and producers organizations but also governments and NGOs, aiming to codify agricultural practices at farm level for a range of commodities. Their purpose varies from fulfilment of trade and government regulatory requirements (in particular with regard to food safety and quality), to more specific requirements of specialty or niche markets. The objective of these GAP codes, standards and regulations include, to a varying degree:

- ensuring safety and quality of produce in the food chain
- capturing new market advantages by modifying supply chain governance
- improving natural resources use, workers health and working conditions, and/or
- creating new market opportunities for farmers and exporters in developing countries.

- **About Us**
- Services Offered by FAO
- FAO GAP Principles
- GAP Database
- Contacts

Related ISO standards

- ISO/IEC 17025:1999 Standard or Principles of Good Laboratory Practice
- ISO 22000: 2005 Food safety management systems -- Requirements for any organization in the food chain
- ISO 9001:2000 Quality management systems -- Requirements

Quality assurance in agriculture

Conducting quality agroforestry research



Conducting quality agroforestry research

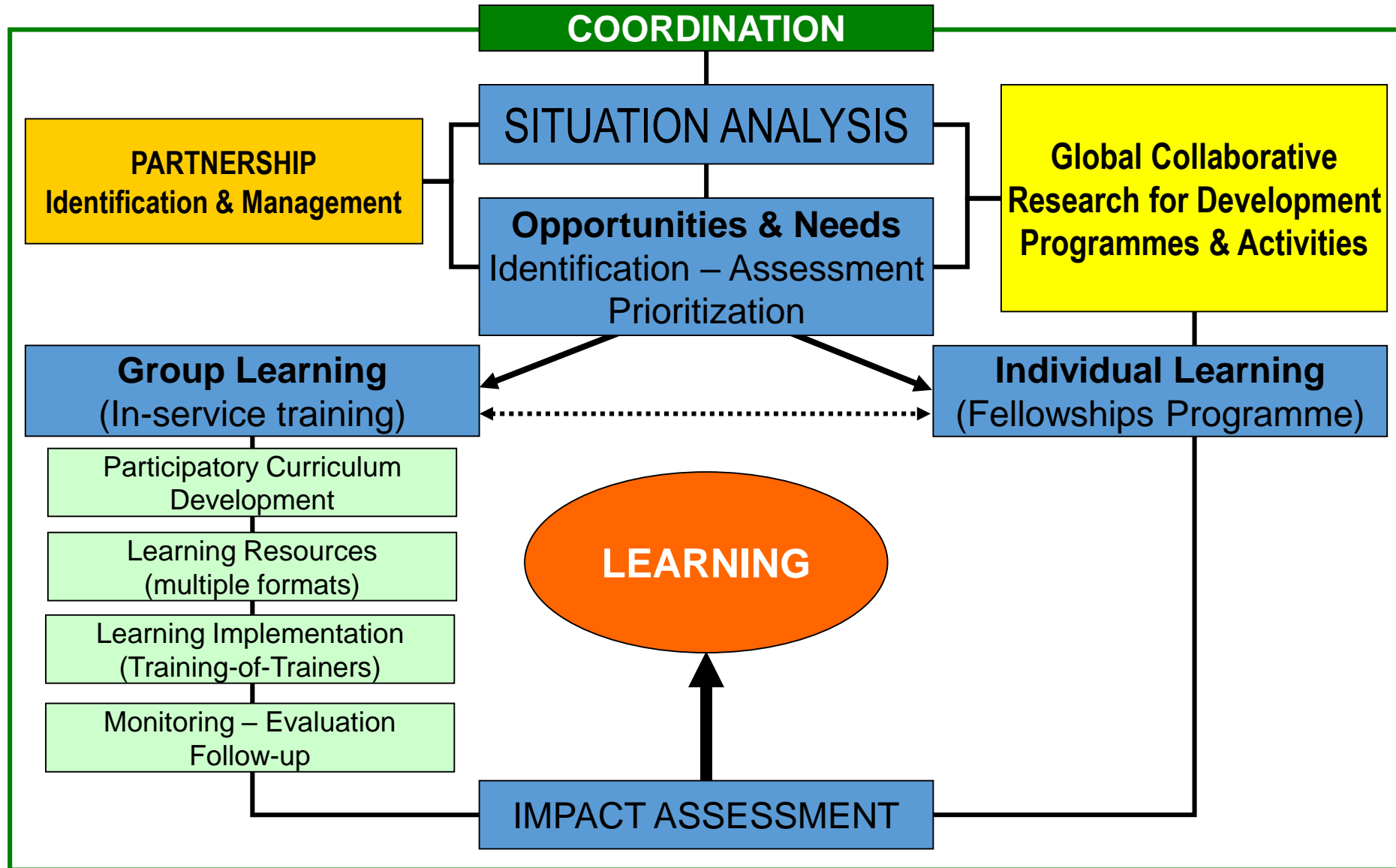
- Context and justification
- Priority setting
- Hypothesis formulation
- Methods and tools
- Results
- Upscaling

Quality assurance in agriculture

Conducting quality agroforestry research



Conducting quality agroforestry training



Quality assurance in agriculture

Conducting quality agroforestry training



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Developing a good quality training course

Teaching research methods on-line

The screenshot displays the user interface of an online training course. At the top, a banner features a photograph of a woman and a cow, with the text "Research Methods: Thinking Scientifically" and "An on-line training course". The CGIAR logo is positioned on the right side of the banner. Below the banner, a navigation bar shows the user is logged in as "Jan Beniest" with a "Logout" link. A breadcrumb trail indicates the current location: "SSC > Research Methods > RMS".

The main content area is titled "Research Methods: Thinking Scientifically" and includes a sub-header "Introduction". A list of course components is provided, such as "Welcome Message", "News forum", "Introduction - Course Aims and Objectives (Animated)", "Introduction: Aims and Objectives (animation)", "Question & Answers Forum", "Task 1: Getting to know you", "Who's Who Forum", and "Glossary".

On the left side, there are three sidebar panels: "People" with a "Participants" link, "Messages" showing 3 messages from "Cary Clark", and "Activities" with links to "Assignments", "Choices", "Forums", "Glossaries", "Questionnaires", "Quizzes", and "Resources".

On the right side, there are three sidebar panels: "Section Links" with a list of numbers "1 2 3 4 5 6", "Recent Activity" showing activity since Monday, 12 May 2008, 11:12 PM, and "Quote of the week" with a text block: "We have three principle means: observation of nature, reflection, and experiment. Observation gathers facts, reflection combines them, and experiment verifies the results of the combination. It is essential that the observation of nature be assiduous, the reflection..."

Developing a good quality training course

Managing a blended learning event



Developing a good quality training course

Views from participants & facilitators



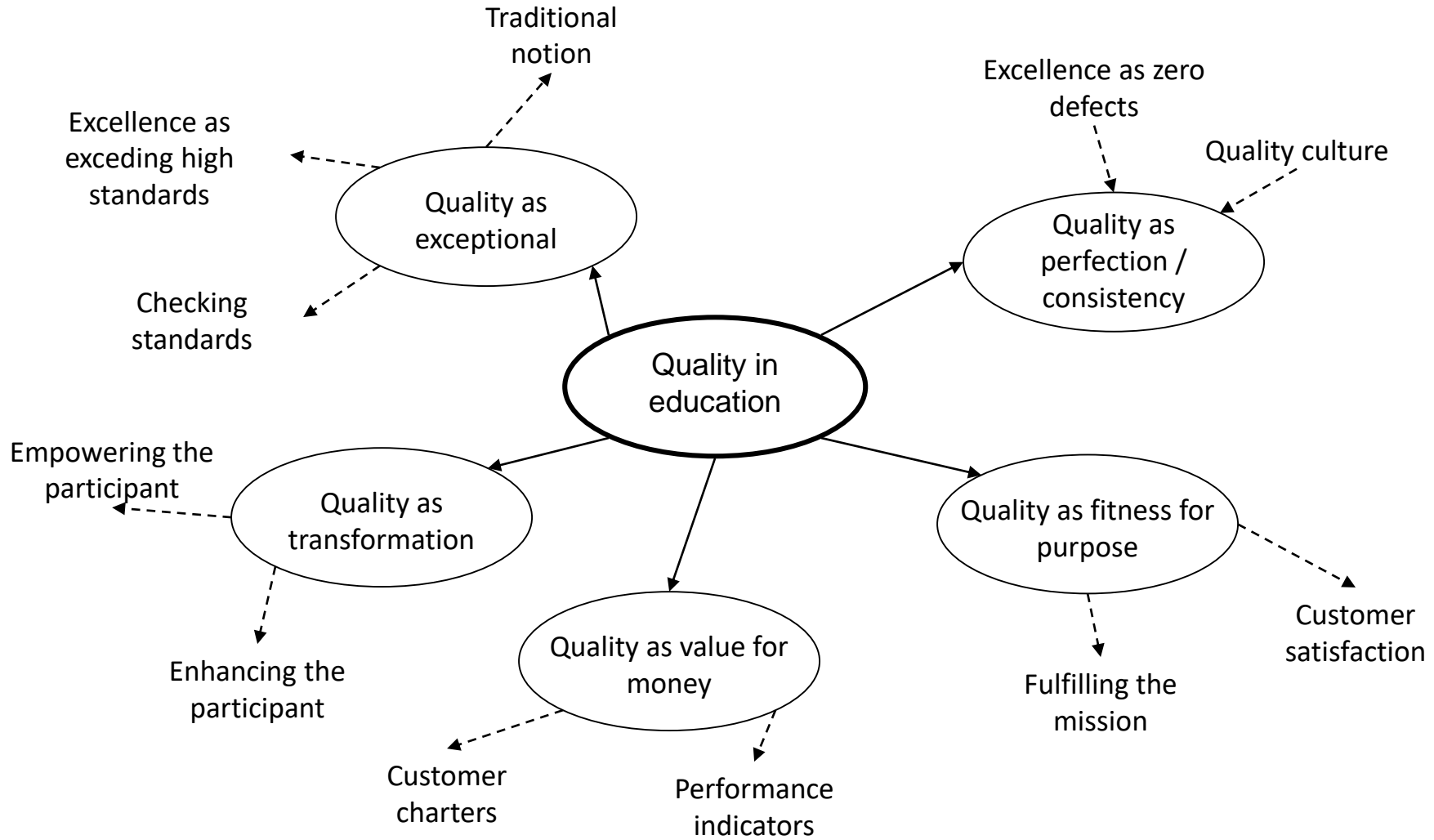
Conclusions

- Select small and homogeneous target groups
- Provide an introduction course on the LMS used
- Intensive facilitation is necessary (retention)
- Requires adapted instructional design
- Provide SMART learning objectives / instructions
- Selected resources/references on a DVD / CD
- Detailed impact assessment/cost efficiency analysis needed
- Think of the potential to develop “Open Educational Resources”

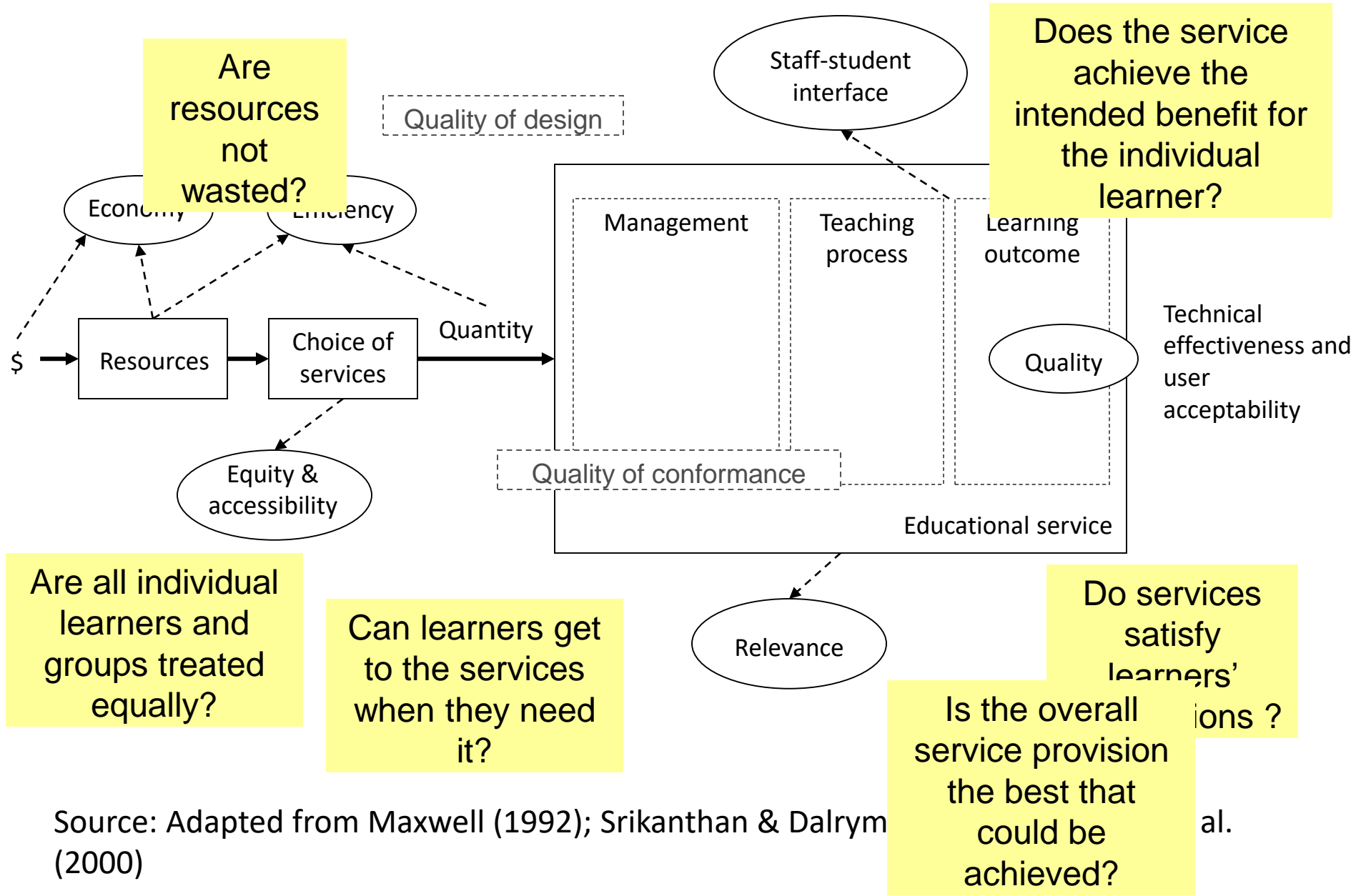
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Concepts of quality in education



Dimensions of quality in education



Source: Adapted from Maxwell (1992); Srikanthan & Dalrym (2000)

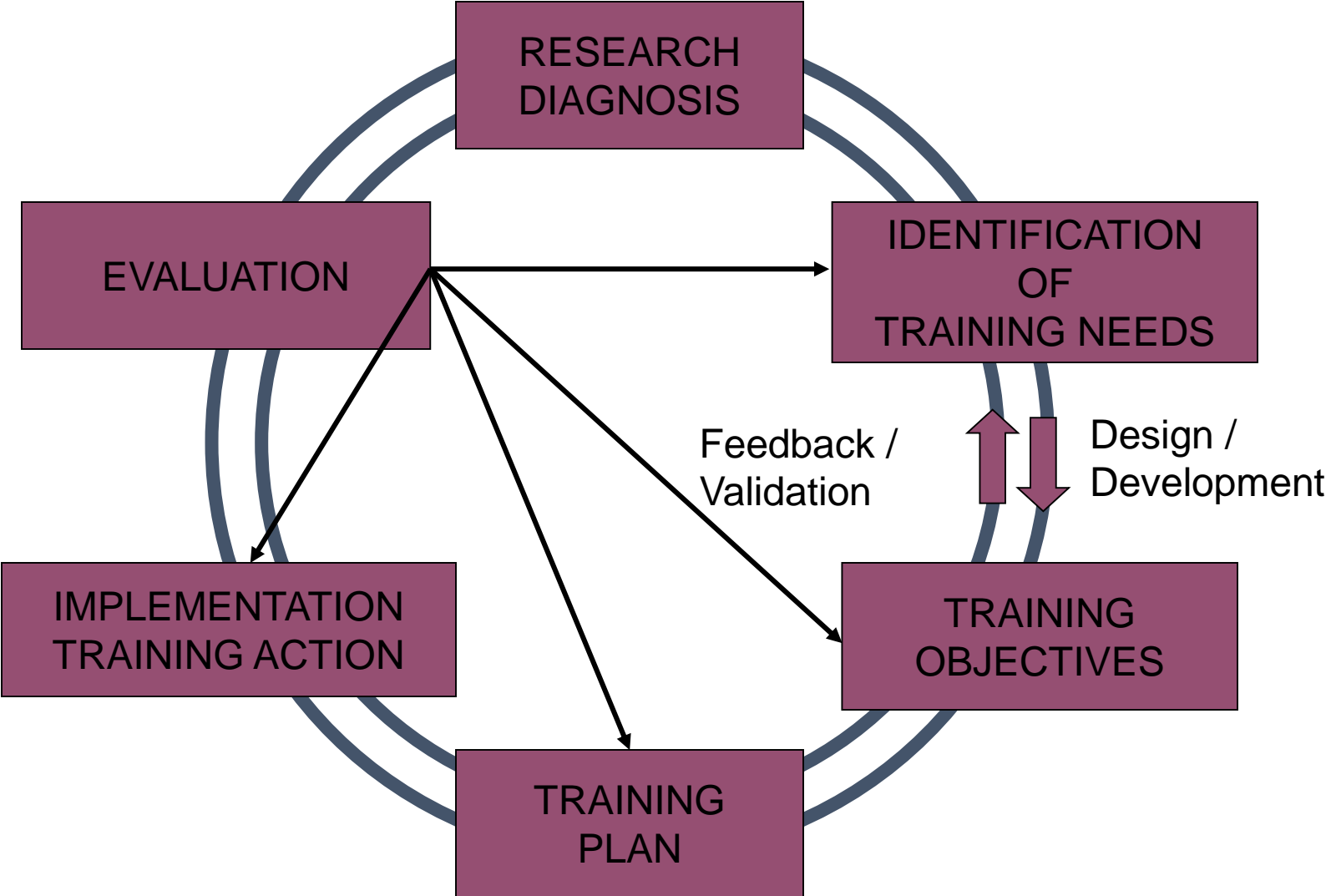
Converging quality assurance approaches

- Purpose
- Philosophy & incentives
- Audience
- Administration & authority
- Financing - costs & resources
- Level of analysis
- Scope & focus
- Mechanisms & methodology
- Product

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The ICRAF training process



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Discussion questions

- Question # 1 - How should we define and measure “quality” for Sustainable Agricultural Research and Education? And how can this contribute to international public goods knowledge products?
- Question # 2 – If we wish to strengthen partners’ capacities for doing quality Agriculture research and education what are the best processes, methods and content? What values, development mandates and pedagogies should inform us?
- Question # 3 - Can Agenda 21, complementary instruments and other consensus agreements provide international guideposts in developing quality standards for (sustainable) agricultural research and education?
(Return to later)
- Question # 4 - How can we strengthen (and improve or measure the quality of) education or research for agriculture sector “sustainable livelihoods” amid different/conflicting views?

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Basic concepts of ISO 9000:2000 & EFQM

The 8 Principles of ISO9000:2000

- Customer focus
- Leadership
- Involvement of people
- Process approach
- System approach to management
- Continual improvement
- Factual approach to decision making
- Mutually beneficial supplier relationships

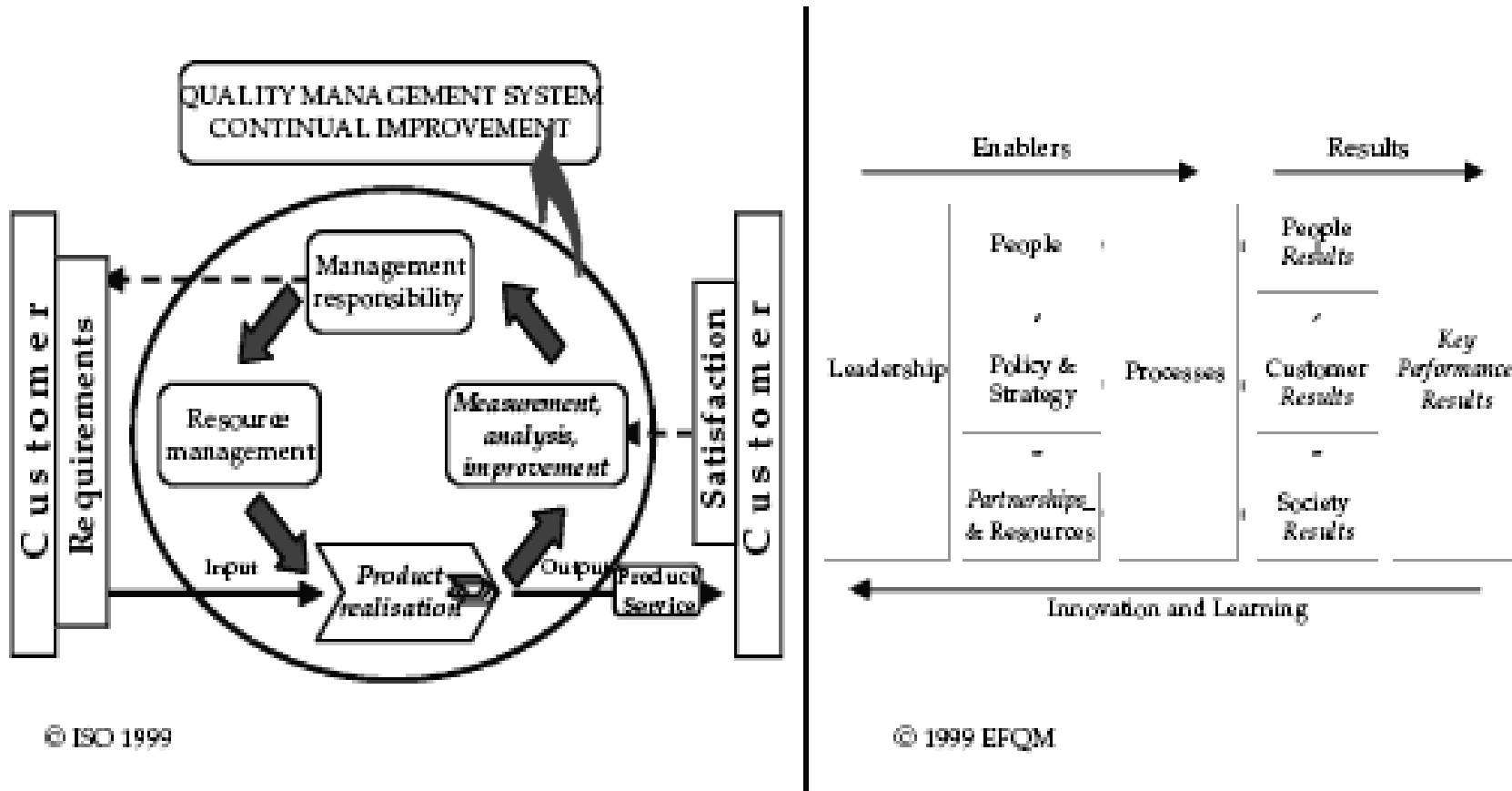
© ISO 1999

Fundamental Concepts of the EFQM Excellence Model

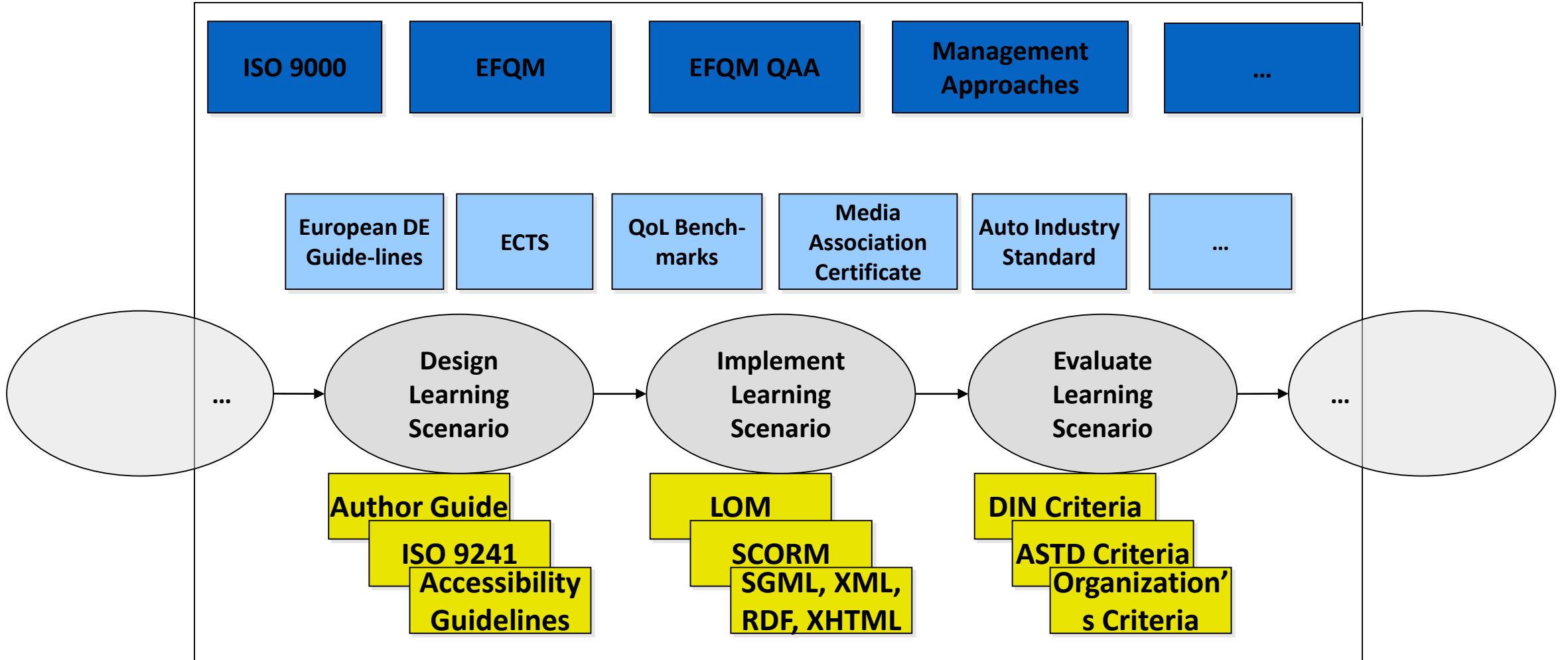
- Customer focus
- Partnership development
- People development and involvement
- Management by processes and facts
- Continuous learning, innovation and improvement
- Leadership and constancy of purpose
- Public responsibility
- Results orientation

© 1999 EFQM

Basic concepts of ISO 9000:2000 & EFQM



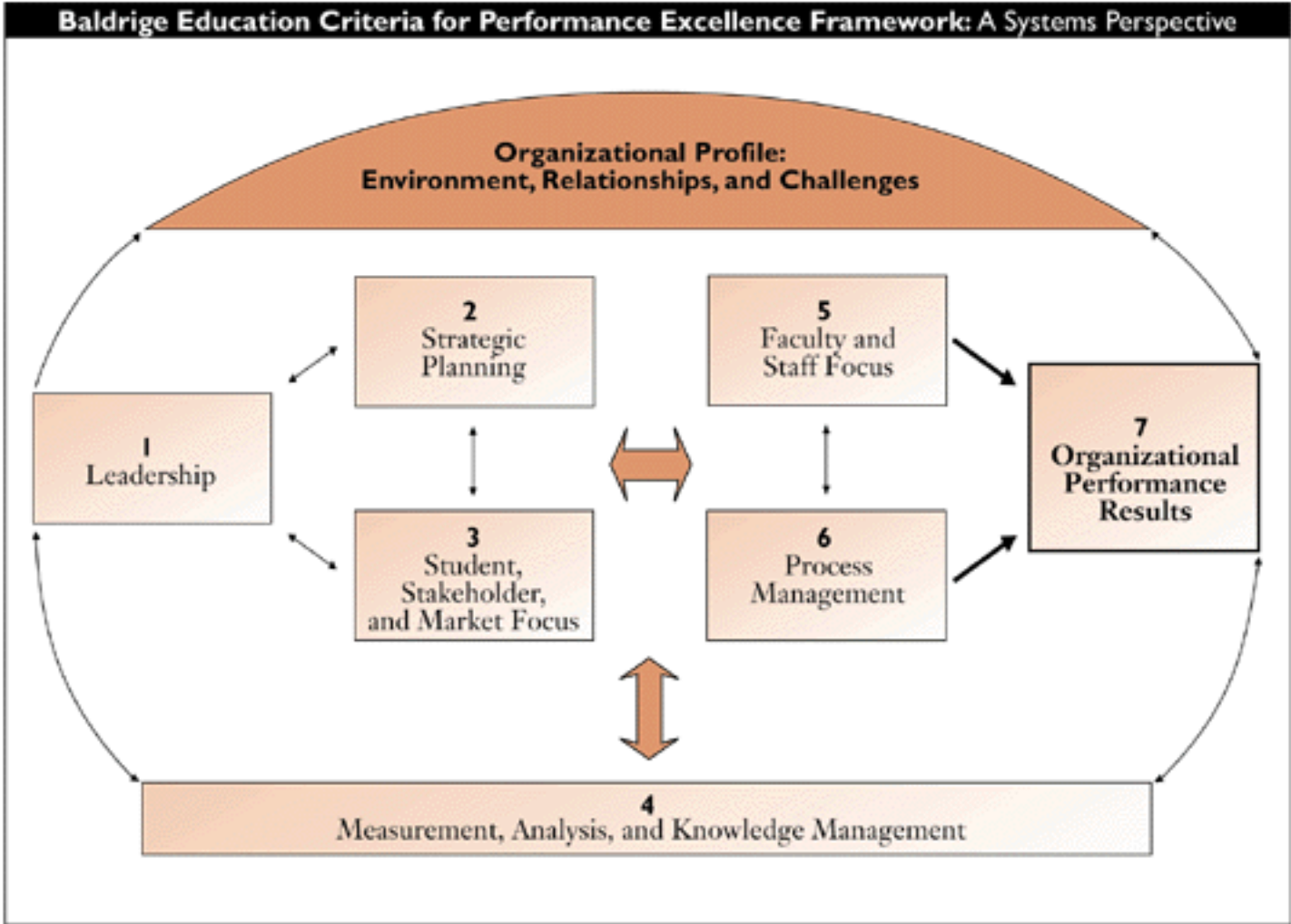
ISO 19796-1



ISO 19796-1

ID	Category	Process Name	Description	Relations
3.2	Conception / Design	Concept of the contents	Concept of learning and teaching contents	1.1 Demand analysis 2.2 Qualifications
Sub process(es)	Content selection Content Design			
Objective	1. Learner Demand: The goal is to provide contents adapted to the needs and demand of the learner. 2. Adaptation: Each course shall provide different content presentation formats and entry points based on the user experience.			
Method	1. A prototype of the content shall be provided to a group of learners' representatives. In a consensus process, the contents shall be prioritized and agreed on. 2. For each course, classify groups of learners according to their learning type. Adapt presentation format and methods according to these learning types.			
Result	1. Documentation of planned and agreed contents 2. Periodically, evaluate learning performance of different learners (test groups).			
Actors	Curriculum designer, didactic experts, institution accreditation authority, teacher, learners' representatives			
Metrics Criteria	The content are measured based on their relevance, importance, exemplaricity, ...			
Standards	Higher Education Standards			

Baldrige education criteria



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Training challenges in the CGIAR

- CGIAR “training” is in high demand by national partners and clients
- Limited human and financial resources for capacity strengthening
- Centers work mostly in isolation often leading to duplication of efforts
- Learning materials are dispersed and in many different formats
- Focus remained on more traditional learning approaches

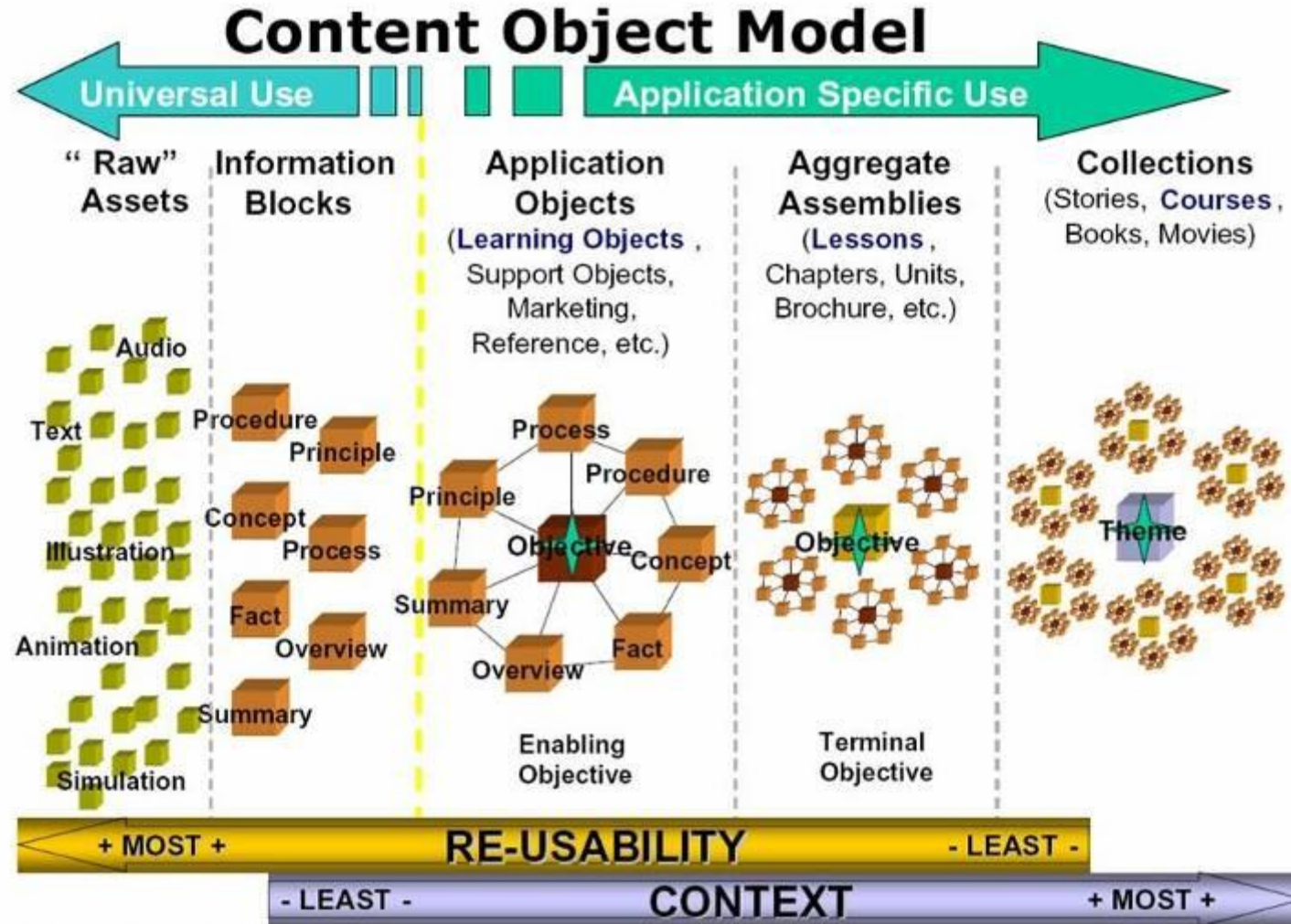
Improving training in the CGIAR

- Develop appropriate quality assurance protocols
- Ensure better coordination within and among Centers
- Exploit the advantages of ICT such as e-learning

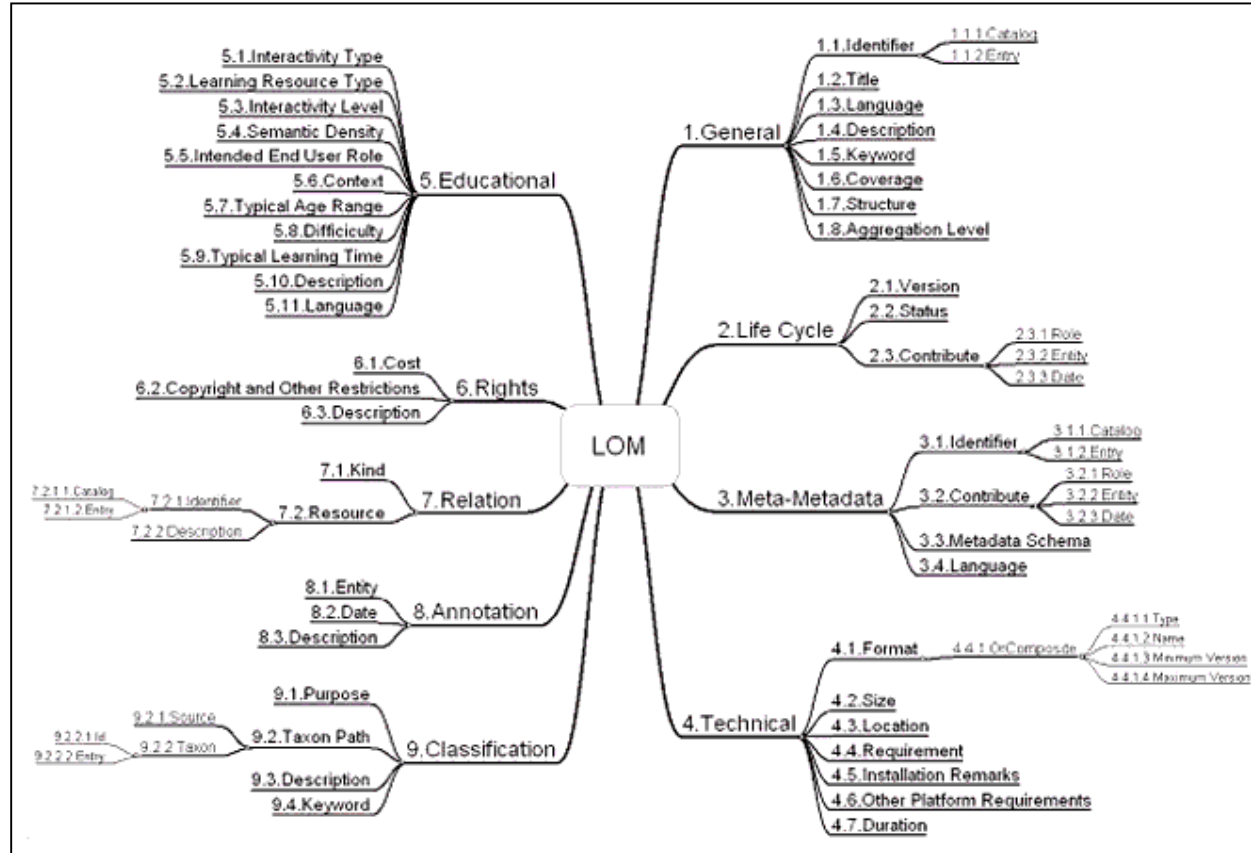
Opportunities for training in the CGIAR

- Create a CGIAR training community of practice that works together to address the learning needs of our partners in research, development, training and education
- Make use of recent advances in ICT to avail CGIAR learning resources in agriculture and natural resources management to an international learning community

Learning objects for training



Learning object metadata



The CGIAR and quality assurance in AET

Repositories and referatories

The screenshot shows the MERLOT website homepage. At the top left is the MERLOT logo with the tagline "Multimedia Educational Resource for Learning and Online Teaching". A search bar is located at the top right. Below the logo is a navigation menu with items like "Home", "Communities", "Learning Materials", "Member Directory", "My Profile", and "About Us". The main content area features a "Welcome to MERLOT" message, a "Log In" section, and a "Participate" section. A sidebar on the left lists various subject categories such as Arts, Business, Education, Humanities, Mathematics and Statistics, Science and Technology, and Social Sciences.

The screenshot shows the Gateway to 21st Century Skills website. The top navigation bar includes "home", "learning & teaching", "teaching & management", "certification", "air", "about", and "help". A search bar is on the right. The main content area features a large banner with the text "Quick and easy access to thousands of educational resources" and a photo of a woman. Below the banner is a "Search the GEM Catalog" section with a search input field and a "Browse the Catalog" button. A sidebar on the left contains a "navigation" menu with items like "home", "Learning & Teaching", "Leading & Managing", "Partnership", "ASN", "About", and "Help".

The screenshot shows the Ariadne Knowledge Pool search interface. At the top left is the Ariadne logo, which features the European Union flag and the word "ARIADNE". To the right of the logo is the text "Welcome to the Ariadne Knowledge Pool , guest". Below this is a search bar with the word "Search" on the left and "Preferences Logout" on the right. Underneath the search bar are four buttons: "Simple Search", "Advanced Search", "Federated Search", and "Visual Browse". At the bottom is a search input field with the placeholder text "Enter search terms" and a "Launch" button.

CGIAR Learning Resources Center

CG *On-line Learning Resources*

Welcome to the CGIAR Learning Resources Center

From this page you can access a repository of CGIAR Centers' learning objects and other training resources, as well as Web-based training courses. You can access these sites anonymously to search and retrieve information and resources as well as enroll in courses. If you wish to contribute resources or need further information please contact the [Learning Resources Team](#). Thank you for visiting.

- [CG Learning Resources](#)
- [Moodle - Learning Management System](#)

ict-km
Communicate, Create, Collaborate
A PROGRAM OF THE CGIAR

© 2005-2006 Consultative Group on International Agricultural Research (CGIAR)
Powered by ARIADNE

The CGIAR and quality assurance in AET

CGIAR Learning Resources Repository

The screenshot displays the search interface of the CGIAR Learning Resources Repository. At the top left, the logo reads "CG On-line Learning Resources" in a mix of green and blue fonts. At the top right, it says "Welcome Guest". Below this is a dark blue header bar with the text "CG Learning Resources" in white. Underneath the header is a light blue navigation bar containing the word "Search" on the left, and "Preferences" and "Login" on the right. Below the navigation bar are three tabs: "Simple Search" (which is selected and highlighted in a darker blue), "Advanced Search", and "Federated Search". Below the tabs is a search input field with the placeholder text "Enter search terms" in green. To the right of the input field is a "Launch" button.

CGIAR Learning Management System

The screenshot displays the CGIAR Learning Management System interface. At the top left, the logo reads "CG On-line Learning Resources". In the top right corner, there is a notification "You are not logged in. (Login)" and a language dropdown menu set to "English (en)".

The main content area is divided into three sections:

- Main Menu:** Contains a link to "Moodle tutorial - example from Knowledge Sharing workshop".
- Available Courses:** Lists various course categories and individual courses, each with a small icon and an information icon. The categories include:
 - CGIAR General:** Knowledge Sharing workshop, On-line Learning Resources (OLR) Workshop.
 - CGIAR Open Educational Resources:** Research Methods - Thinking Scientifically.
 - CIP - International Potato Center:** Feeding cities in Anglophone Africa with urban agriculture.
 - ICARDA - International Center for Agricultural Research in the Dry Areas:** Experimental design and data analysis, Hybridization Techniques in Faba Bean, Introduction to Biological Nitrogen Fixation, Hybridization Techniques in Chickpea.
 - ICRAF - World Agroforestry Center:** Contextualising Teaching and Learning in Schools Using Natural Resources - the case of school tree nurseries, Vegetative Tree Propagation in Agroforestry.
 - FAO Courses:**
- Welcome message:** "Welcome to the CGIAR Learning Management System. This versatile framework enables centres to produce and maintain online courses."
- Course categories:** A list of course categories with search options:
 - CGIAR General
 - CGIAR Open Educational Resources
 - CIP - International Potato Center
 - ICARDA - International Center for Agricultural Research in the Dry Areas
 - ICRAF - World Agroforestry Center
 - FAO Courses
 - UNU-EHS
 - Stellenbosch Courses
 - You can play around with moodle and ariadne over here...
 - Search courses...
 - All courses...

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Policy and legal frameworks / approaches

UNESCO/UN (and other) Perspectives on International “Standard Setting Instruments” (for Education & Research) Views / Agreements / Laws on Education & Research implicating quality imperatives (and debates) for agriculture / sustainable development sectors:

- Resolutions, Declarations and Recommendations (**soft law**, but authoritative and **symbolic intentions** of governments and other signatories or executing agencies).
- Conventions (**hard law**, authoritative and **binding intentions** of governments and other signatories, supported/upheld in mandates of executing agencies).
- Guidelines (for legal or process interpretation or implementation / actions / outcomes) prepared by UN Secretariats, committees, international commissions, monitoring bodies, etc.
- Action plans (esp for UN/International System) indicating timed, goal oriented intentions or steps to achieve certain standards/objectives (e.g. education, agriculture, environment, etc.).

Sustainable agriculture education

Standard-setting instruments (1)

- 1992 Rio Declaration on Environment and Development
- 1992 Agenda 21
- 1992 Convention on Biological Diversity
- 1993 Vienna Declaration and Programme of Action (World Conference on Human Rights)
- 1996 Rome Declaration on World Food Security
- 1997 Recommendation concerning the Status of Higher-Education Teaching Personnel
- 1998 World Declaration on Higher Education for the Twenty-first Century: Vision and Action and Framework for Priority Action for Change and Development in Higher Education

Sustainable agriculture education

Standard-setting instruments (2)

- 1999 Declaration on Science and the Use of Scientific Knowledge,
- 1999 Science Agenda - Framework for Action
- 2000 United Nations Millennium Declaration, 55/2. (setting MDGs)
- 2001 "Lüneburg Declaration on Higher Education for Sustainability"
- 2001 Revised Recommendation concerning Technical and Vocational Education
- 2001 International Treaty on Plant Genetic Resources for Food and Agriculture
- 2005 Universal Declaration on Bioethics and Human Rights

Rio Declaration

1992 Rio Declaration on Environment and Development

- Quality issues (for education/capacity-building) are not well articulated, but some key debates and goals are implied.
- **Principle 15 - "PRECAUTIONARY PRINCIPLE" -:**
- "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."
- (**MANY IMPLICATIONS** - Especially now for defining and operationalizing (ecologically) sustainable agriculture, including more open/multi-stakeholder dialogue, learning partnerships, as well as **quality and types of technical/bio-safety training** and **quality of education for biodiversity conservation**. This is of particular concern if capacity strengthening for biotechnology, "crop improvement" training/research support continues, without due regard for the precautionary approach)

1992 Agenda 21

1992 Agenda 21

- Quality issues are not explicit, but goals/standards for defining or doing environmental management, sustainable agriculture, and achieving sustainable development objectives (through education, sciences and capacity building) are.
- **SECTION III. STRENGTHENING THE ROLE OF MAJOR GROUPS**
Chapter 31 SCIENTIFIC AND TECHNOLOGICAL COMMUNITY
- Note in particular the suggestion for: “The adoption and implementation of ethical principles and codes of practice for the scientific and technological community that are internationally accepted could enhance professionalism and may improve and hasten recognition of the value of its contributions to environment and development, recognizing the continuing evolution and uncertainty of scientific knowledge.”
- Concerning implementation (through “Capacity-building”) this chapter finally suggests “**Codes of practice and guidelines, including on appropriate principles, should be developed for and by the scientific and technological community** in the pursuit of its research activities and implementation of programmes aimed at sustainable development.”

Higher Education Teaching Personnel

1997 Recommendation concerning the Status of Higher-Education Teaching Personnel

- Concerning “institutional accountability” **a commitment to quality and excellence... with an obligation to protect and ensure the integrity of teaching, scholarship and research against intrusions inconsistent with their academic missions**
- Demands that “Higher-education teaching personnel have a right to carry out research work without any interference, or any suppression, in accordance with their professional responsibility and subject to nationally and internationally recognized professional principles of intellectual rigour, scientific inquiry and research ethics.”
- Implication that educational or research quality is/can be affected by non-academic (political, economic, etc.) forces
- Suggests that “higher education institutions, individually or collectively, should design and implement appropriate systems of accountability, **including quality assurance mechanisms** to achieve the above goals, without harming institutional autonomy or academic freedom.”
- No specific reference to agriculture or sustainable development in any clauses, but (e.g.) this international instrument as a whole could/should be better integrated with development of quality guidelines and tools for capacity strengthening of the CGIAR and NARS partners

World Declaration of Higher Education

1998 World Declaration of Higher Education for the Twenty-first Century: Vision and Action and Framework for Priority Action for Change and Development in Higher Education

- The Declaration (Article 11) makes **explicit reference to “Qualitative evaluation” needs with quality in higher education as “a multidimensional concept”** embracing “all its functions, and activities: teaching and academic programmes, research and scholarship, staffing, students, buildings, facilities, equipment, services to the community and the academic environment.
- The Declaration suggests internal self-evaluation and external review, conducted openly by independent specialists is “vital for enhancing quality.”
- The Declaration suggests independent national bodies be established and “comparative standards of quality, recognized at international level,” be defined.
- The Framework committed to using higher education “autonomy and high academic standards to contribute to the sustainable development of society” while developing “their capacity to give forewarning through the analysis of emerging social, cultural, economic and political trends, approached in a multidisciplinary and transdisciplinary manner, giving particular attention to **high quality**,...

Declaration on Science

1999 Declaration on Science and the Use of Scientific Knowledge

- The Declaration suggested all countries “should establish suitable measures to address the ethics of the practice of science and of the use of scientific knowledge and its applications. These should include due process procedures for dealing with dissent and dissenters in a fair and responsive manner.
- The Declaration suggested “All scientists should commit themselves to high ethical standards, and a code of ethics based on relevant norms enshrined in international human rights instruments should be established for scientific professions...The social responsibility of scientists requires that they **maintain high standards of scientific integrity and quality control**, share their knowledge, communicate with the public and educate the younger generation.
- **IMPLICATION - Science quality should be considered in terms of social and political/human rights (as well as pedagogical) dimensions, and ethical standards** (including a **code of ethics** which should be **part of quality control systems**). Science is not simply an “objective” (or purely empirical undertaking).

Science Agenda

1999 Science Agenda - Framework of Action

- The Framework stressed “Each country should aim at having high-quality scientific institutions capable of providing research and training facilities in areas of specific interest. In those cases where countries are unable to create such institutions, the necessary support should be granted by the international community, through partnership and cooperation.”
- The Framework stressed “Donor countries and agencies of the United Nations system are urged to foster cooperation in order to improve the quality and efficiency of their support to research in developing countries...”
- ...and to bring high-quality science education to remote locations.”
- The Framework suggested national, regional and global environmental research programmes should be strengthened or developed...(to) include programmes for capacity-building...(while) the goals of the existing international global environmental research programmes should be vigorously pursued within the framework of Agenda 21 and the action plans of the global conferences...”.
- **IMPLICATION - High quality science should be evaluated against Agenda 21 goals and action plans of other global conferences**

Treaty on Plant Genetic Resources

2001 International Treaty on Plant Genetic Resources for Food and Agriculture

- Elements of the “PRECAUTIONARY PRINCIPLE” further reinforced,
- Elements of 1992 Biodiversity Convention reinforced more specifically for plant resources and agriculture
- With respect to the particular concerns and needs of farmers Article 9 suggests that national governments should “take measures to protect and promote Farmers’ Rights...
- **BROADER IMPLICATIONS** (for sustainable agriculture). **The quality of research and broader capacity-building, education and its training objectives and outputs) could be better evaluated in terms of in terms of appropriate knowledge, information, legal instruments and technical skills certification (including bio-safety/biotechnology protocols) for plant resources diversity conservation** (quality of plant resources).
- But also generally if/how capacity building/education programs reinforce/enable implementation of human/farmer’s rights. More specifically the quality of education/training programs or curricula might also include, for example, learning objectives designed to facilitate/test farmer’s understandings of their particular rights and their knowledge of specific legal instruments pertaining to plant/agricultural biodiversity.

Declaration on Bioethics & Human Rights

2005 Universal Declaration on Bioethics and Human Rights (UNESCO)

- Suggested the need for (**Article 23 – Bioethics education, training and information**)
 1. In order to promote the principles set out in this Declaration and to achieve a better understanding of the ethical implications of scientific and technological developments, in particular for young people, States should endeavour to foster bioethics education and training at all levels as well as to encourage information and knowledge dissemination programmes about bioethics.
 2. States should encourage the participation of international and regional intergovernmental organizations and international, regional and national non-governmental organizations in this endeavour.
- **IMPLICATION** (for sustainable agriculture and education) - **The quality of agricultural education, research and capacity building/training objectives could/should be evaluated in terms of adequacy of ethics education and its application**, especially for decision-making with respect to scientific research and technical training which may (adversely) undermine or impact traditional knowledge and biodiversity.

Summary comments / questions

- **Comments/Observations**
- “Quality” is a subjective issue (what is measured depends on beliefs and assumptions about what should be valued and why – There is lack of agreement on this.
- Quality planning or evaluations (education sector) **need to differentiate between or among**
 - 1) **quality of administrative/process issues or institutions and support structures;**
 - 2) **equipment or other resources with necessary logistical or technical support**
 - 3) **teaching or facilitation quality;** and
 - 4) **quality of academic content in courses, materials, research results/products, etc.**, while continuing to resolving debates over what should be learned, taught, or researched and why.

Quality / content of new agricultural knowledge, sciences & education

More discussion questions (1)

- How or should (public) International Agricultural Research Organizations (IAROs) insure coherence, effectiveness, **authentic partnerships**, and greater (sustainable development) quality in achievements or impacts?
- What kind of new quality learning is needed for National Agricultural Research Systems (NARS)?
- What resources for what purposes should IAROs or NARS invest in capacity strengthening and learning to insure quality?
- What do IAROs and NARS need to learn more of and better to reflect quality in their research and education institutions ?
- Does content matter for quality? (e.g. linked to UNESCO-DESD objectives and Agenda 21 related conceptual/knowledge and policy frameworks)
- Are more reforms needed for (public) higher education curricula, research institutes, sciences?

Quality / content of new agricultural knowledge, sciences & education

More discussion questions (2)

- Is more critical thinking and teaching on controversial issues, alternative development paths, and new research methods, as well as agro-ecology, social science, etc., needed? Are related curriculum reforms and teacher training programmes possible? Could these contribute to better education quality?
- Can we better facilitate more authentic stakeholder dialogues/open learning opportunities on controversial (and interrelated) agriculture, environment and development issues (**Education, not just “training”**)?
- If so how will/should such study, education processes, learning events and dialogue be supported? Through traditional education systems as well as open/online distance mechanisms?
- Who should pay for quality and content assessments or learning system improvements?
- What else do we need to consider as essential for designing quality education and research programs or testing and measuring quality?

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