



Applicability of the Addis Ababa Principles and Guidelines to the sustainable use of agricultural biodiversity

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1. Background
2. Africa Regional Workshop results
 - Considerations, for each of the 14 Addis Ababa Principles on Sustainable Use, to address the special nature of Agricultural Biodiversity
 - Illustrated with examples of ongoing work by FAO and partners
3. Possible process to further develop guidance for SU of agro-biodiversity



Sustainable use of biodiversity - a crosscutting issue

CBD Article 10: “The use of components of biodiversity in a way and at a rate that does not lead to long term decline, thereby maintaining its potential to meet needs and aspirations of current and future generations”.

- 40% of world's economy is based on the use of biological resources
- Sustainable use is an effective tool to combat poverty and to achieve sustainable development (WSSD; MDG)
- Decision VII/14 adopted the **Addis Ababa Principles & Guidelines for the Sustainable Use of Biodiversity**: 14 practical principles, operational guidelines and a few instruments for their implementation that govern the uses of components of biodiversity to ensure sustainability.
- *Decision VII/12 recognized that agricultural biodiversity was not adequately addressed . Special nature as it depends on human management and continuous adaptation/evolution in the ecosystem.*

Challenge: to balance the need to meet needs of growing populations and maximize human livelihoods against the necessity of conserving the natural resource base

Agricultural Biodiversity is complex...

**Human
management practices & decisions**

**CULTURAL
DIVERSITY**

GENETIC and SPECIES DIVERSITY
wild and domesticated species – harvested / used
and associated biodiversity
(soil biota, pollinators, predators)

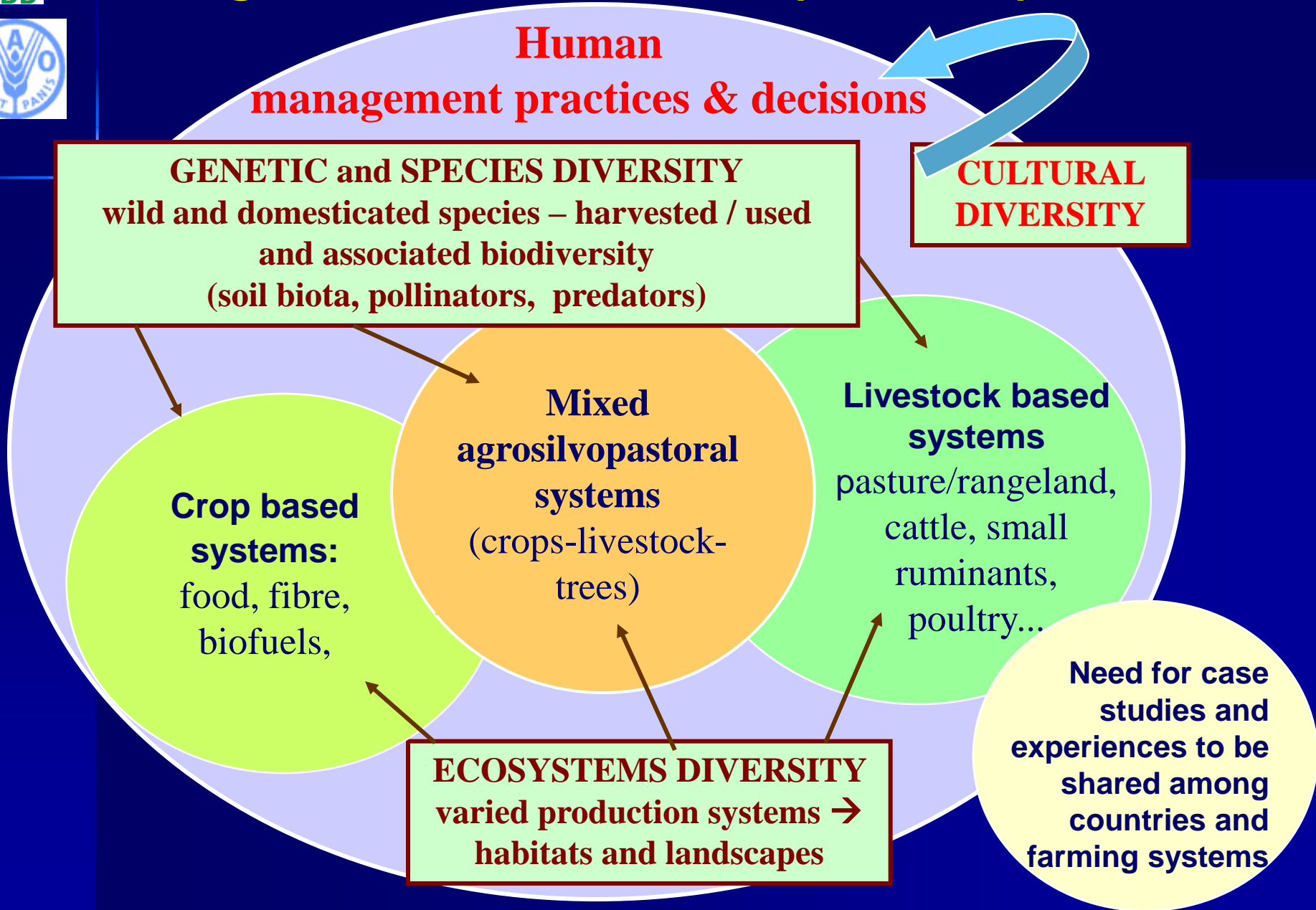
**Crop based
systems:**
food, fibre,
biofuels,

**Mixed
agrosilvopastoral
systems**
(crops-livestock-
trees)

**Livestock based
systems**
pasture/rangeland,
cattle, small
ruminants,
poultry...

ECOSYSTEMS DIVERSITY
varied production systems →
habitats and landscapes

**Need for case
studies and
experiences to be
shared among
countries and
farming systems**



Farmers manage agricultural biodiversity - a vital part of NRM

← Farmers managing **genes**:

e.g. participatory plant breeding



← Farmers managing **species** (animal breeds; commodities; local foods)

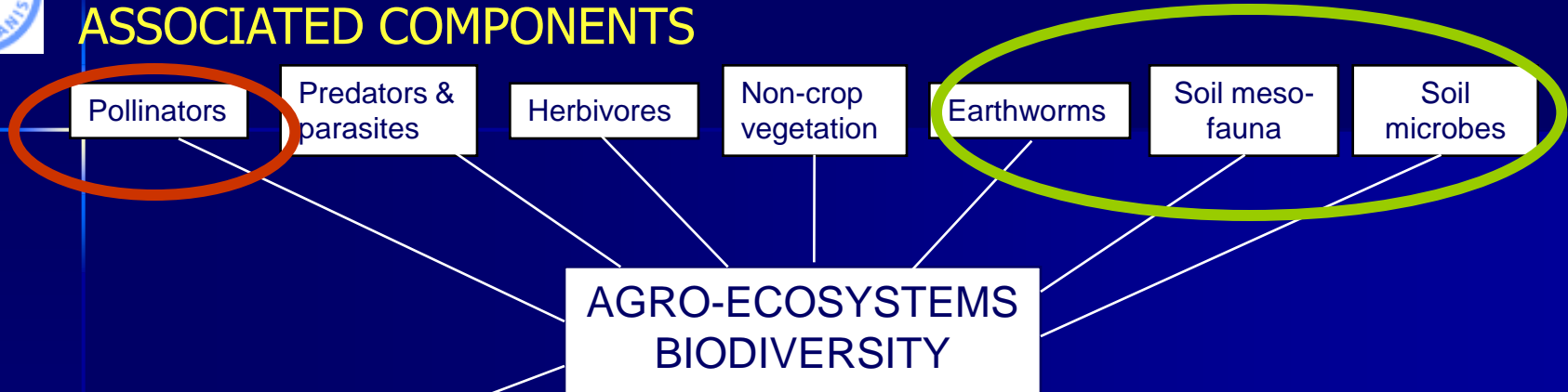


and managing **ecosystems**
components and interactions (soil-
plants- pests) →

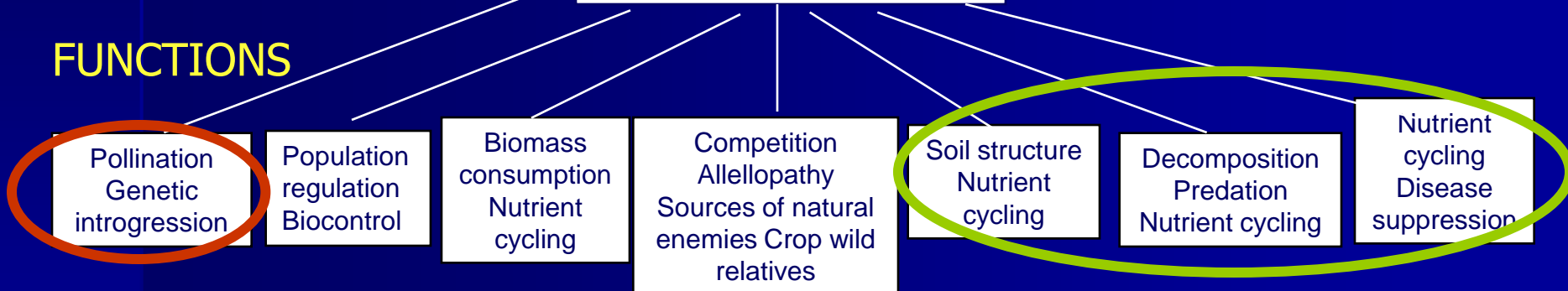


Managing biodiversity & agro-ecosystem function

ASSOCIATED COMPONENTS



FUNCTIONS



Biodiversity Friendly Practices (productivity + sustainability)

Apiculture

IPM

Crop-livestock systems/Rotations

Fallow – grasslands - field borders

Agroforestry

No-Tillage/cover crops

Organic matter management



Results of African Regional Workshop on Sustainable Use of Biological Diversity- A focus on Agricultural Biodiversity

Workshop **Nairobi, December 2006** hosted by UNEP and organized by:

- Secretariat of the Convention on Biological Diversity (CBDSec)
- UN Food and Agricultural Organization (FAO)

33 Participants

- 18 African countries (13 designated by CBD Parties)
- Research institutions, NGOs, farmers federations, indigenous /pastoralist peoples' organizations

Key Partners

- Bioversity International (IPGRI)
- World Agroforestry Center (ICRAF)
- Tropical Soil Biology & Fertility Institute of CIAT (TSBF)
- International Federation of Agricultural Producers (IFAP)

Informed by FAO processes:

- Commission on Genetic Resources for Food and Agriculture,
- International Treaty on PGRFA
- State of World Reports on Plant and Domestic Animal Genetic Resources,

Resulted in suggestions on the applicability to Agro-biodiversity of the Addis Ababa Principles on Sustainable Use →

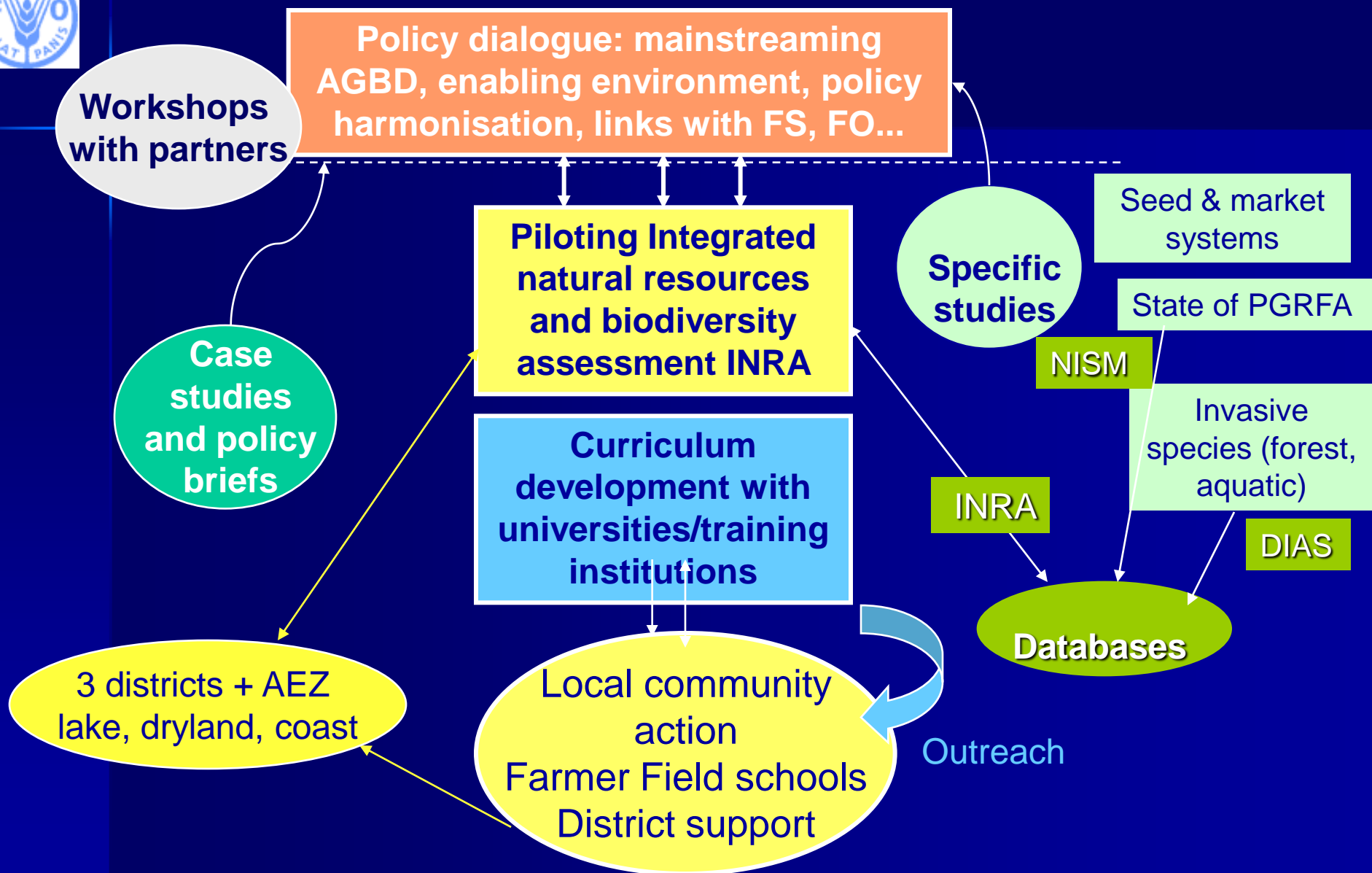
AA Principle 1: Supportive policies, laws & institutions at all levels of governance and effective linkages

For agricultural biodiversity (AGBD)

1. **Identify agriculture - environmental synergies** -> raise awareness & support actions that maintain ecosystem functions and services)
2. **Share information and build capacity** at all levels of governance in the application of AGBD friendly policies and action plans
3. **Platforms/institutions** needed at all levels for dialogue/exchange of views
4. Review and **identify ways to harmonise policies** to better address AGBD
 - through multi-stakeholder process (**ensure feedback of farmer/herder groups**)
 - inter-sectoral mechanisms (**e.g. national AGBD committee or task force**)
 - identifying areas of conflict or risks to AGBD (market distortions, etc)
5. Develop **supportive policies (e.g. codes of conduct /bye laws to promote AGBD)** building on existing policy and institutional processes:
 - IT-PGRFA, State of World reports on PGRFA & AGR, Plant conservation Trust
 - and through a consultative process with all stakeholders (incl. farmers, communities, Indigenous peoples and private sector)



Example Kenya: Mainstreaming AGBD - policy review, information, assessment, capacity building, adaptive management



Case study Kenya: Using markets to promote sustainable use of crop genetic diversity

Assessment:

- Factors (policies) affecting the flow of crop diversity (seed varieties) through market and non-market channels to farmers
- Impact of diversity in seed supply channels on farm level use of AGBD
- Sustainability of farm level patterns of use of CGR

Preliminary results:

- active demand for diverse seed varieties in local markets
- variation in diversity between commercial vs. local marketing chains
- seed sector regulation affects the flow of diversity in marketing chains, in some case restricting farmers access to some varieties (e.g. favours formal sector certified seed over local/traditional varieties for food security – **case of pigeon pea, millets in Kenya**)
- **Need to review seed regulations /policy for non-commercialized food security crops to ensure farmer access to appropriate seeds and varieties.**





AA Principle 3: Identify, remove or mitigate policies which contribute to habitat degradation or generate perverse incentives that undermine sustainable use of biodiversity

For agricultural biodiversity

- Identify current mechanisms/systems that have perverse incentives on agrobiodiversity
 - seed system (free/subsidised seed creates dependency)
 - food aid and food dumping
 - subsidies for specific commodities and export; (delinking fertilisers; poorly adapted species – e.g. maize in drylands)
 - pricing strategies
- Provide incentive measures for diversified agro-ecosystems that contribute to restoring degrading lands and enhancing livelihoods
 - participatory breeding; promote traditional food species
 - support shift to conservation agriculture/ agroforestry/ hedges
 - diversified market outlets, niche markets, eco-labels
 - Payments for environmental services (C stocks, biodiversity, water)



Example: Conservation and Adaptive Management of Globally Important Agricultural Heritage Systems (GIAHS)

Initiated by FAO in 2002, recognizing that many traditional farming systems worldwide are

- unique in many agro-ecological & socio-economic aspects
- harbour important agro-biodiversity & indigenous knowledge and
- resilient to climate variability and change

Aim: to establish the basis for the identification, recognition, conservation and sustainable management of such agricultural systems and their associated landscapes, biodiversity, knowledge systems and cultures (~200 systems identified in all regions)

Project Goals (pilot countries with GEF, UNDP and co-funding support e.g. Germany):

- global level: consolidate/disseminate lessons learned and best practices from pilots
- national level: mainstream the GIAHS concept in (inter)-sectoral plans and policies
- site level: promote conservation and adaptive management of such agro-ecosystems at community level

Outcome: Enhance food and livelihood security of local populations that depend on GIAHS systems by:

- maintaining and adapting the systems (dynamic conservation);
- empowering local communities and their social organizations (enhance benefits);
- policy change, incentive mechanisms, innovative market access (added value through eco-labelling; Payments for environmental services)



AA Principle 2: Local users of biodiversity should be empowered and supported by rights for responsible use of resources

For agricultural biodiversity

- Promote **stewardship** for common property resources and catchments (Landcare approach, participatory action plans, etc.)
- Identify ways to **prevent overexploitation** (overgrazing, overharvesting of wild fuelwood or food species, ...)
- Provide **security of land tenure** and resources **access and use rights** (Land Acts, users associations)
- **Develop added value** (processing, niche markets) or **compensation mechanisms** (e.g. alternative livelihoods)
- Local communities cannot shoulder cost for AGBD and NRM conservation! Provide support for sustainable use and **ensure benefits** of community stewardship plans
- **Monitor and evaluate** implementation of CBD and AA Principles and progress in meeting goals (**conservation and sustainable use of AGBD; equitable sharing of benefits; food security**) with communities, indigenous peoples, other stakeholders.
- Mobilise **funds** to enable IP and local communities to develop platforms, organize workshops, where they can discuss what SU means for their communities.



Need to support agro-biodiversity conservation /SU as part of wider natural resources/SLM

Grass-strips between crops, Machakos District Kenya



Gramminae Conservation through Sustainable management and Use-



WOCAT World overview of conservation approaches & technologies

Issues of global concern: desertification, poverty, water scarcity and conflicts
42 case studies from more than 20 countries around the world, documenting a wide range of technologies and approaches to soil and water conservation
detailed analysis of study results including policy points for decision makers and donors

where the land is greener
case studies and analysis of soil and water conservation initiatives worldwide

'where the land is greener' looks at soil and water conservation from a global perspective. In total, 42 soil and water conservation technologies and 28 approaches are described – each fully illustrated with photographs, graphs and line drawings – as applied in case studies in more than 20 countries around the world. This unique presentation of case studies draws on WOCAT's extensive database, gathered in over 12 years of field experience.

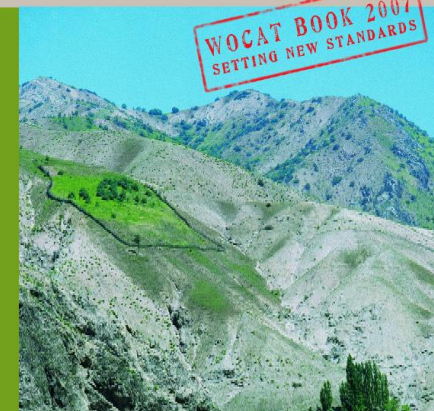
The book is intended as a prototype for national and regional compilations of sustainable land management practices a practical – instrument for making field knowledge available to decision makers.

Various land use categories are covered, from crop farming to grazing and forestry. The technologies presented range from terrace-building to agroforestry systems; from rehabilitation of common pastures to conservation agriculture; from vermiculture to water harvesting. Several of these technologies are already well-established successes – others are innovative, relatively unknown, but full of promise. Descriptions of the various technologies are complemented by studies of the 'approaches' that have underpinned their development and dissemination. Some of these approaches were developed specifically for individual projects; others developed and spread spontaneously in fascinating processes that offer a new perspective for development policy.

In addition to the case studies, the book includes two analytical sections on the technologies and approaches under study. By identifying common elements of success, these analyses offer hope for productive conservation efforts at the local level with simultaneous global environmental benefits. Policy pointers for decision makers and donors offer a new impetus for further investment – to make the land greener.

"This book is very timely in view of current environmental concerns..." UNEP 2006
"...demonstrates that sustainable agricultural technologies are real options that contribute directly to food security..." FAO 2006

WOCAT BOOK 2007
SETTING NEW STANDARDS



Indian farmers use honeybee colonies – *Apis cerana* /*A. mellifera* to pollinate apple crop, Himachal Pradesh Himalayas



(land and water focus)



AA Principle 4: Practice adaptive management based on: Science and traditional/local knowledge; monitoring the use, impacts & status of resources, adjusting management

For agricultural biodiversity

- Support **adaptation** of land use systems and farming practices to
 - **climate change** and changing socio-economic situation
 - appropriate spatial (**watershed**) & temporal scale (**longer term**)
- **Participatory research** with farmer /herder groups (**FFS study plots**)
- **Feedback** between research and land users (e.g. local indicators for evaluation and monitoring of SU)
- Use of local knowledge needs **approval of local communities/owners** (care not to impede desirable flow of knowledge and resources)
- **Long term strategies and support** to prevent unsustainable practices (e.g. indiscriminate burning, repetitive tillage, soil nutrient mining)
ensure short and long term benefits e.g. Conservation agriculture)



AA Principle 6: Promote and support interdisciplinary research into all aspects of use and conservation of biodiversity (link to P4 adaptive management)

For agricultural biodiversity

- Include participatory research & adaptive management methods
- Interdisciplinary research with communities to encompass:
 - **production goals** (food, nutrition, quality goods for sale, income)
 - **provision of other ecosystem services in agric production systems** (water supply, C sequestration and climate change, nutrient cycling, pest and disease control);
 - **sustainable and viable livelihood systems**
- Compare, contrast and build on farmer innovation and scientific approaches (ethnobotany, FFS, etc.)
- Develop partnership between research and farmers' organisations for better sharing information and experience

Farmer Field Schools on AGBD + SLM with farmer/herder groups and schools

requires trained extension/facilitators

Step by Step Process

1. AGBD study (PRA)
2. Identify issues for FFS
3. Curriculum development
4. FFS study/AESA monitoring/ evaluation
5. Document process/ lessons

Resources management –
pastoral, aquaculture systems
Diversification- species, habitat
management
Soil health + pollination,
gender + IK links



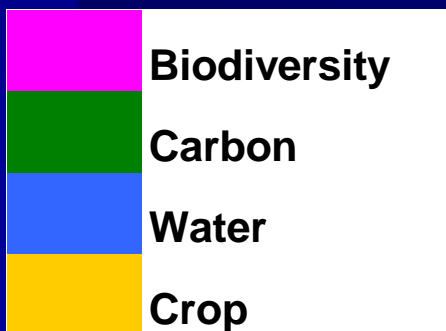
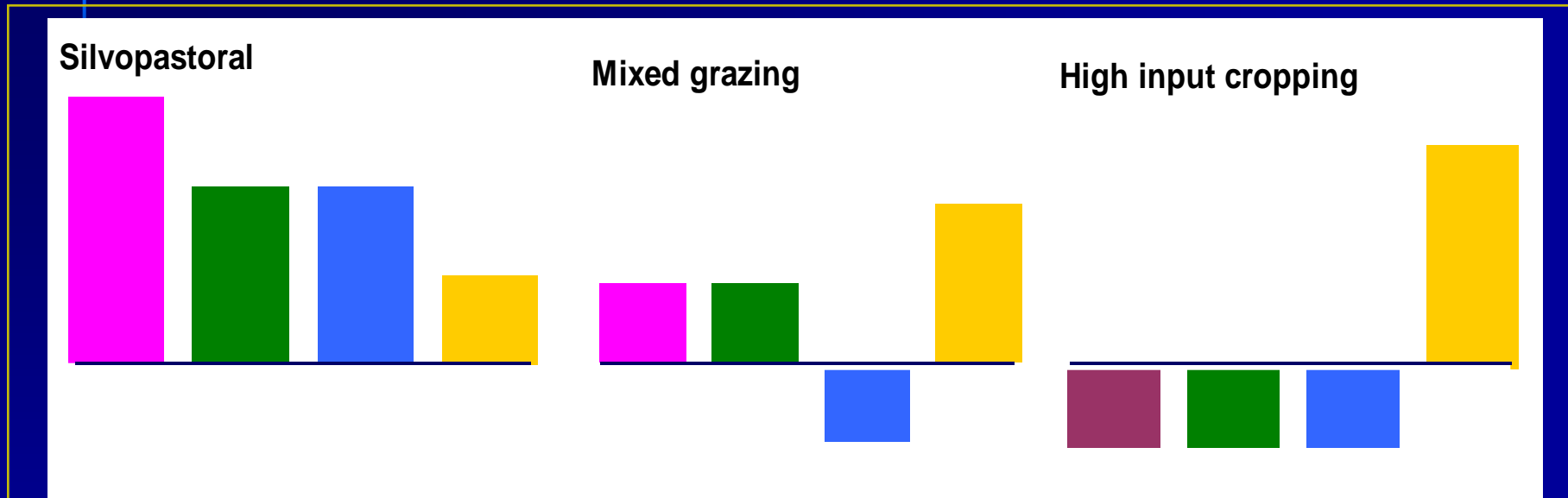


AA Principle 5: SU management goals and practices should avoid or minimize adverse impacts on ecosystem services, structure and functions and other components of ecosystem

For agricultural biodiversity

- SU management goals and practices should **enhance ecosystem functions and services** (*positive*)- *need awareness and incentives*
- Ensure policies and SU plans **address livelihood needs** such as energy (*deforestation for firewood vs cost of planting/electricity*)
- Develop alternative technologies to help **mitigate adverse impacts** (Government and private sector)
- Promote agro-ecological approaches that **mimic/support functioning of natural systems** (integrated pest management, soil biological management, pollination)
- Take into account interaction between ecosystems
 - **promote land use mosaics** (habitat diversity),
 - **address upstream-downstream linkages** (land and water users),
 - **buffer zones around reserves/PAs** for community management

Ecosystem Services Supplied by 3 different land management systems



Provisioning services - food, fibre, biofuel, water supply

Regulating services - C, nutrients, water regime, pests

Supporting services – soil biotic activity, pollination, predation

Cultural services- agrotourism, spiritual etc.



AA Principle 7: The spatial and temporal scale of management should be compatible with the ecological and socio-economic scales of the use and its impact

For agricultural biodiversity

- Balance community short term needs (use of resources) with long term objectives (good practices)
- Management plans for herders/pastoralists to account for seasonality and long term drought management strategies
- Address climate change predictions and their impacts on biodiversity
- Interlinkages between ecosystems - avoid contamination
 - e.g. GAP for cotton system will ensure bd friendly cotton systems but also need to avoid negative impacts of nearby ecosystems- leaching etc.)
- Stakeholder processes to discuss use of resources and scale implications



AA Principle 8: International cooperation arrangements where multi-national decision-making and coordination are needed

For agricultural biodiversity

- Multi-national technical committees also to be multi-stakeholder and multi-sector (AG sector must be a key partner in Cons./SU processes)
- To enhance sharing of GR among countries (IT-PGRFA) need:
 - models and experiences (e.g. genebanks, plant conservation trust?)
 - diffusion and adaptation of tools and experiences (e.g mutual transfer agreements, PIC etc. (for example biotechnology),
 - mechanisms for dialogue/collaboration with communities, local Govt.
- Need transboundary agreements and management plans to enhance SU of AGBD across borders e.g to address:
 - offsite impacts of land & water management (up-down stream users);
 - shared lakes, wetlands and pastures
 - migratory pollinators, predators of pests and other beneficial species
 - management/control of livestock/crop pests & diseases and alien invasive species (terrestrial, aquatic)
 - livestock - wildlife interactions, dry-season grazing /access to water



AA Principle 9: An interdisciplinary, participatory approach should be applied at appropriate levels of management and governance related to SU

For agricultural biodiversity

- Operational guidelines are needed to promote **integrated** management of **agro-ecosystems/landscapes** and their biodiversity components
- Participation **among sectors** (biophysical; socioeconomic) and **multi-stakeholder** process with concerned actors/ management levels (i.e. land users, community, district, national & international reps.)
- Avoid top-down decision-making approaches that exclude indigenous peoples and local communities.
- Take into account traditional management and customs (customary law, decision making processes etc.)
- Build on experiences of and involve relevant networks
 - Indigenous peoples networks
 - Pastoral networks e.g. World association of mobile pastoral peoples'



AA Principle 10: International & national policies to take into account: current & potential values derived from the use of biodiversity; intrinsic & other non-economic values; market forces

For agricultural biodiversity

- P10 rationale needs to be reformulated for AGBIO as:
 - inappropriate distinction between natural & man-made systems
 - the term **natural ecosystems** does not reflect fact that most land is actively managed
 - need to take into account traditional practices and customs.
- Encourage governments to take into account agro-biodiversity values in
 - national and sub-national programmes, accounts and budgetary processes (value to the economy - lower risk, food and nutritional security)
 - provide training and capacity building for implementation
- Valuation of environmental services in agroecosystems should include
 - economic, social and cultural aspects
 - potential values and current value (climate change)
 - existence value (e.g value gained from agro-tourism)
- Take into account the **range of ecosystem services provided by AGBD (provisioning supporting, regulating and cultural)** - essential for increased recognition of benefits of AGBD to national economies and to farmers/herders/other users of resources and their sustainable rural livelihoods



AA Principle 11: Users of biodiversity components should seek to minimize waste and adverse environmental impact and optimize benefits from uses

For agricultural biodiversity

- Should refer to „users of **ecosystems and their** biodiversity components“ (**ecosystem approach**)
- Need to assess environmental impacts of agricultural land use and management practices and use of agrobiodiversity; and put in place mechanisms to minimize negative impacts on SU
- Avoid preferential support by Governments to intensive/industrial systems (tends to disadvantage local communities/small-scale producers)
- Provide incentives for environmentally friendly recycling
 - **replace indiscriminate burning by organic matter management (e.g. pollution Lake Victoria)**
 - **sound livestock waste management (LEAD)**
- Provide non-financial incentives such as training, information and support for adoption of improved technologies building on local innovations
- Apply penalties for practices with negative environmental impacts
 - **Overuse and misuse of pesticides, mineral fertilizers**
 - **Poor livestock waste management from intensive systems**
 - **Pollution from agroindustry**



AA Principle 12: The needs of indigenous/local communities, who depend on and contribute to SU and C of biodiversity, should be reflected in equitable distribution of benefits from the use of resources

For agricultural biodiversity

- Indigenous peoples and local communities
 - are directly dependent on agbiod and NR
 - have experiences and skills in ecosystem management,
- But they do not have the skills and resources to follow international processes, and international negotiations and the resulting documents are difficult to understand (technical phrases; jargon).
- IP and local communities are indispensable partners in all efforts to conserve agrobiodiversity / ecosystems and they need to be more effectively included as active stakeholders in international negotiations and processes through:
 - Strengthening capacities/ training;
 - Financial support and mechanisms to participate at all levels of the CBD and FAO processes.



AA Principle 13: Costs of management & conservation of biodiversity should be internalized within the management area & reflected in the distribution of benefits from the use

For agricultural biodiversity

NB: This is not appropriate for agro-biodiversity as the farmers cannot be expected to bear the costs of providing benefits of conservation to the rest of society, including future generations.

Incentive measures and compensation mechanisms are needed to enable farmers to conserve agro-biodiversity where they are not directly benefiting from its use.



AA Principle 14: Education & public awareness programmes on C and SU should be implemented and effective methods of communication developed among stakeholders and managers

For agricultural biodiversity

Some Examples:

- Raise awareness and enhance outreach to IP and local communities through organizing regional workshops that include IP and NGO participation.
- Strengthen capacities for inter-community management of cross-border resources including:
 - conflict resolution mechanisms
- Draw on experiences of stakeholders including indigenous networks (WAMIP etc.)
- Promote collaboration for enhanced AGBD management across administrative boundaries within countries (districts, federal states)
 - in regard to off site impacts
 - through community-driven processes
 - building on traditional processes/customs

Further recommendations of the African Regional Workshop on SU of agro-biodiversity (cf. Nairobi statement)

- Develop an additional principle on SU of AGBD to address monitoring and assessment including use of the DPSIR framework
- Further development of guidelines on SU of AGBD (as a stand alone document or operational annex of AA guidelines –to avoid confusion)
- Possible Process:
 - FAO assist CBD Secretariat to further develop SU guidelines with support of partners
 - focus on ecosystem interactions among components of agricultural biodiversity
 - build on ongoing work (IT, State of World's PGRFA, SOW Animal GR)
 - Organize a global ad-hoc technical expert meeting, with representation from all regions and partner organizations to
 - refine further guidance on the Sustainable Use of agricultural Biodiversity and
 - develop a set of 2010 biodiversity targets specifically aimed at AGBD
 - FAO CGRFA could monitor, enable and facilitate national AGBD programmes as a core element of a multi-year plan of work
 - through case studies of policy reform, information exchange, technical reviews, advice to governments, priority setting and generating support

Thank you for your interest and attention



*← healthy ecosystems →
for healthy happy farmers*

