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United Nations



Role and Importance of Gene Banks for Conserving Genetic Resources for Food and Agriculture



Dr. Kakoli Ghosh

Strategic Programme for Sustainable Agriculture

FAO, Rome, Italy

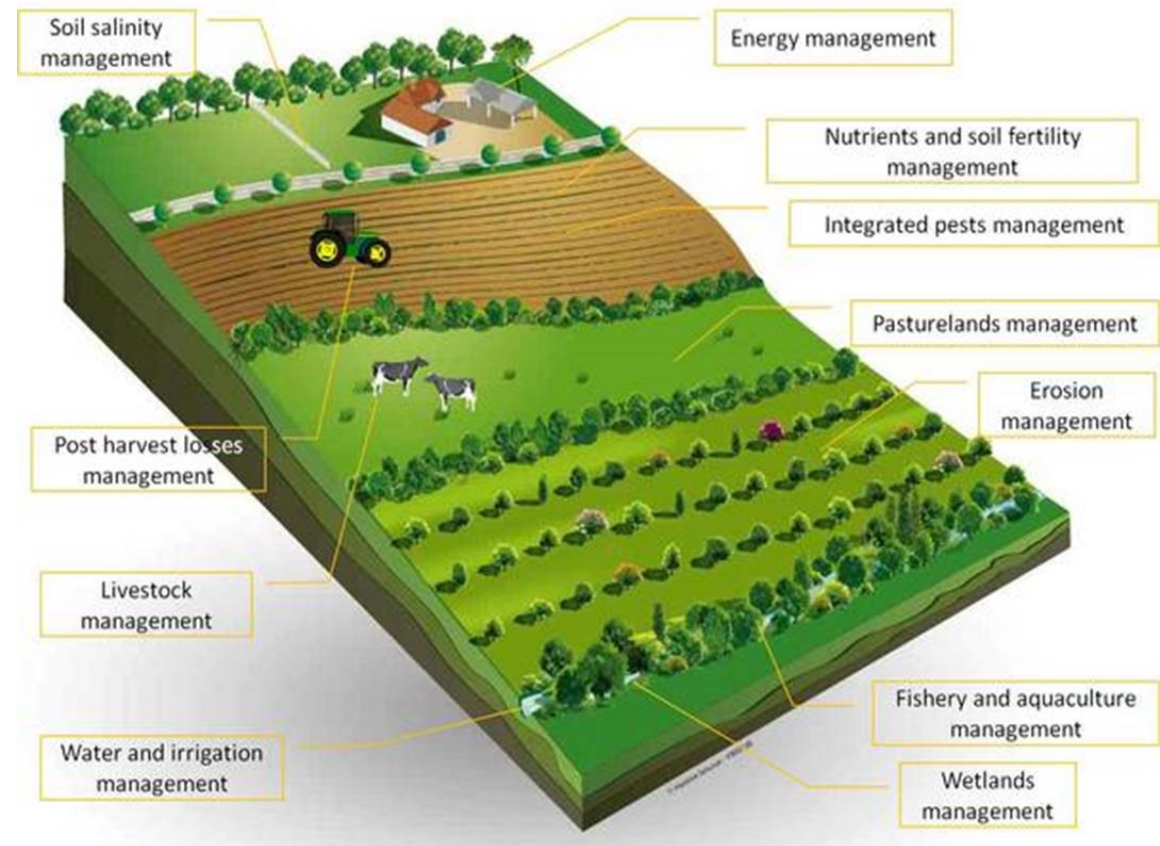
Workshop for Development of Gene Banks in OIC Member States,
5- 6 July 2020

Working for  **#ZeroHunger**

Profound State of Agricultural Unsustainability: Need a Paradigm Shift



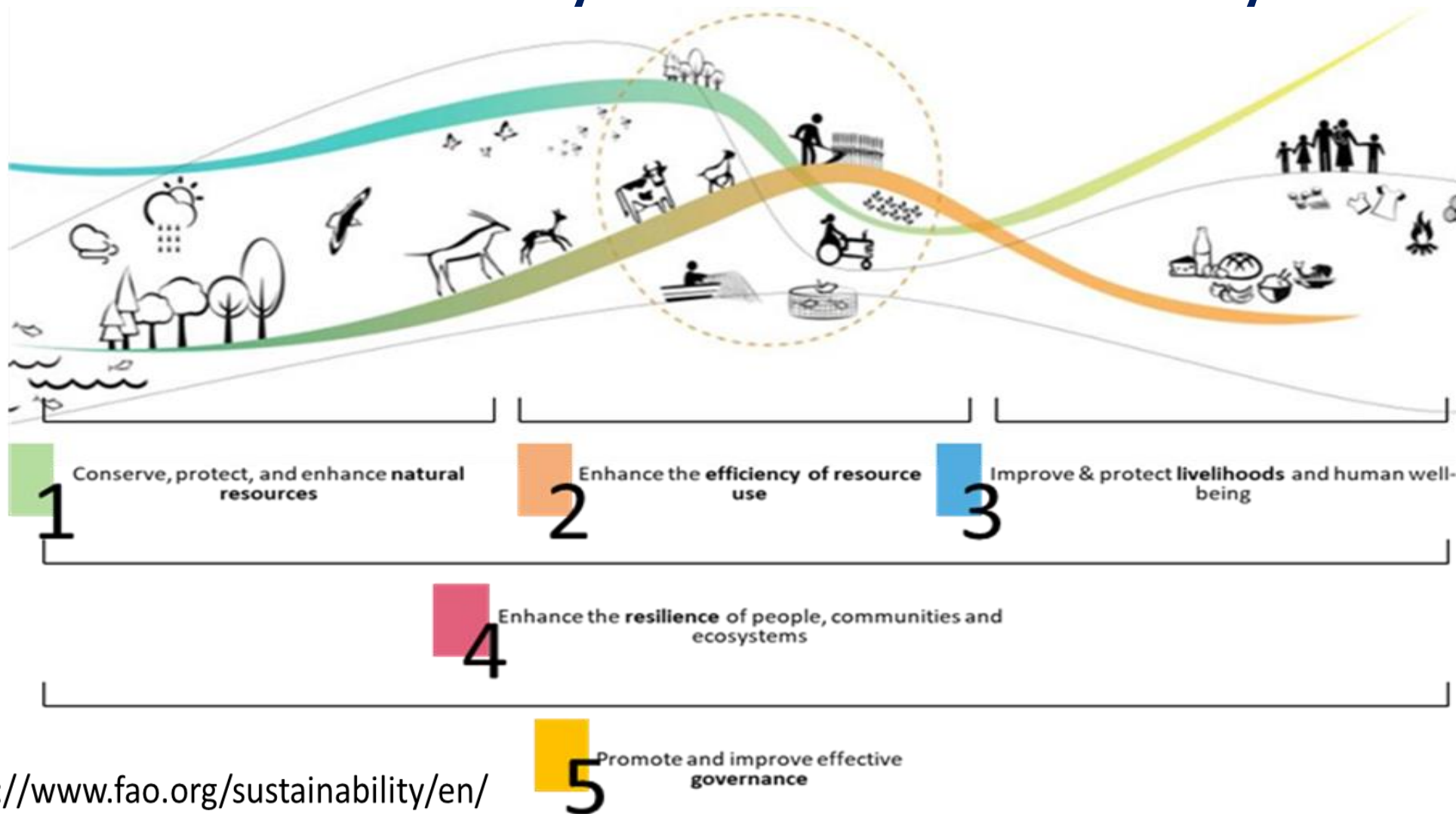
- Low productivity, yield decline, stagnation
- Narrowing genetic base
- Climate change – extremes
- Over exploitation of natural resources
- Ground water pollution and water scarcity
- Land degradation, soil erosion
- Loss of biodiversity and ecosystems services
- Loss of incomes, opportunities and livelihoods



Agriculture has to align with nature post-COVID pandemic



A Common Vision for Sustainable Agriculture: Genetic diversity is essential for sustainability



List of Top 20 Hottest Peppers

- Bhut Jolokia (Scoville 1,000,000) - Red Savina (Scoville 580,000)



- Habanero (Scoville 500,000) - Scotch Bonnet (Scoville 250,000)



- Malagueta (Scoville 100,000) - Murupi (Scoville 60,000)



- Fidalga (Scoville 50,000) - Pimenta-de-bode (Scoville 50,000)



- Cayenne (up to Scoville 50,000) - Tabasco (up to Scoville 50,000)



- Cumari (Scoville 50,000) - Pimenta-de-cheiro (Scoville 20,000)



- Dedo-de-Moça (Scoville 15,000) - Jalapeño (Scoville 5,000)



- Guajillo (Up to Scoville 4,000) - Chilaca (Up to Scoville 2,500)



- Pasilla (Up to Scoville 1,500) - Anaheim (Up to Scoville 1,400)

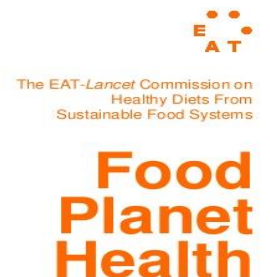
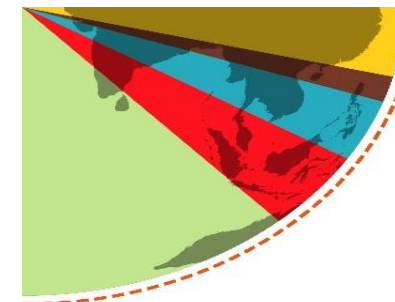


- red chili (Up to Scoville 750) - Sweet Bell (Scoville 0)



Global reports highlight major concerns

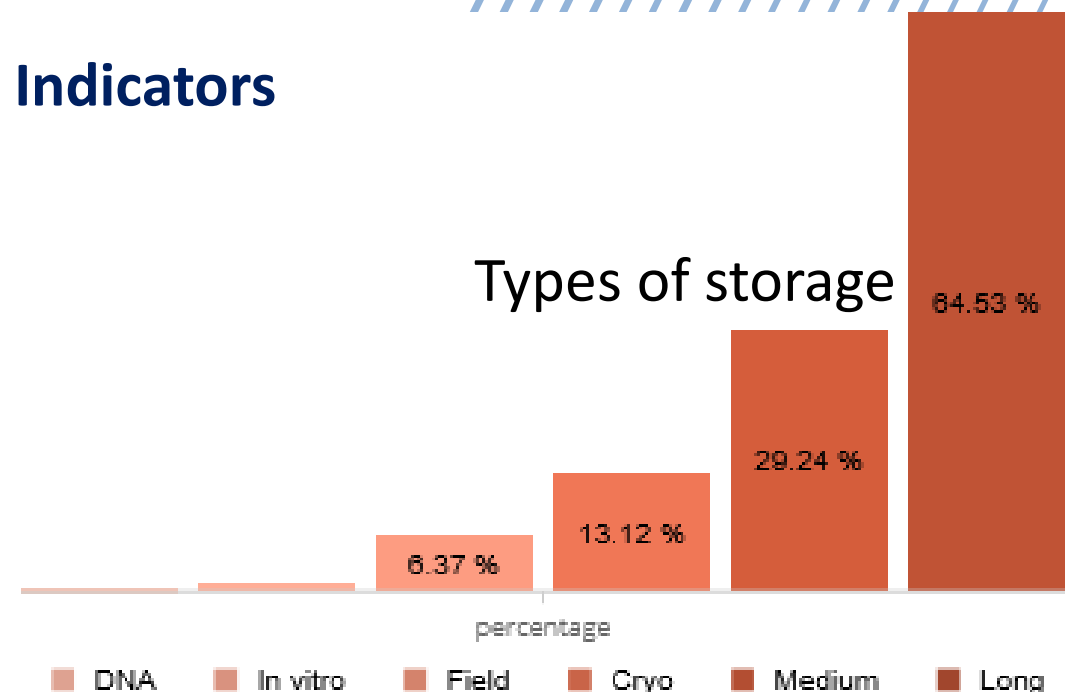
- **IBPES : Global Assessment Report on Biodiversity and Ecosystem Services** finds that around 1 million animal and plant species are now threatened with extinction, many within decades, more than ever before in human history
- **FAO: The State of the Worlds biodiversity for Food and Agriculture** plant diversity in farmers' fields is plummeting rapidly. Nine plant species of roughly 6,000 cultivated for food globally account for 66 percent of total crop production
- **EAT–Lancet Commission on Healthy Diets from Sustainable food systems** Transformation to healthy diets by 2050 will require substantial dietary shifts, including100% increase in consumption of healthy foods, such as nuts, fruits, vegetables, and legumes. Changes needed differ greatly by region





Status of SDG Indicators

Regions	Accessions	Genebanks
Africa	307691	47
Americas	1090131	168
Asia	863940	67
Europe	1946440	404
Oceania	286593	6
Regional	71807	7
International	862048	12



*SDG 2.5.1a: Number of PGRFA secured in medium or long term conservation facilities – **OFF TRACK***

- 5.3 million samples of plant genetic materials conserved in gene banks in 99 countries and 17 regional and international centers –increase in holdings in 2018
- Genebanks missing intraspecific diversity, crop wild relatives, underutilized crops species,
- Target not on track due to poor maintenance, capacities, funding at national level



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Status of SDG Indicators

SDG 2.5.1b Number of AnGRFA secured in medium or long term conservation facilities

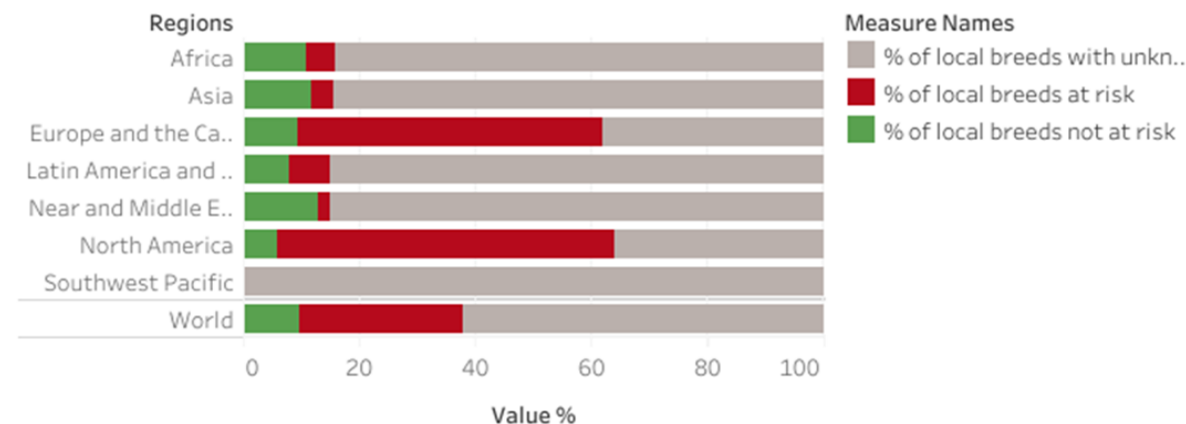
OFF TRACK

- There are around 8800 livestock breeds of 38 different species, under-reporting prevents global gene bank inventories
- Only 3.28% of local animal breeds have material stored, less than 1% have enough material for reconstitution
- Establishing and sustaining effective livestock breeding programmes is a major challenges for many countries

SDG 2.5.2 Proportion of local breeds, classified as being at risk, not-at-risk or unknown level risk of extinction

OFF TRACK

- 60% of local livestock breeds are at risk of extinction in the 70 countries that have risk status information.
- Globally, the risk status remains unknown for 2/3rd local livestock breeds.
- 84% are considered to be at risk in Europe, 44% for South America and 71% for Southern Africa.



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Global coordination of Genetic Resources for Food & Agriculture

- The Commission on Genetic Resources for Food and Agriculture is an intergovernmental body for biodiversity for food and agriculture, estd. in 1993.
- Prepares global assessments, negotiated Global Plans of Action, Codes of Conduct; monitors GPA implementation, liaises and addresses related issues - biotechnologies, climate change etc.



Demonstrate that sustainability is profitable for small-scale farmers and at scale

I. PRODUCTIVITY

- Facilitate access to resources
- Connect smallholders to markets
- Encourage diversification
- Build producers' knowledge



Systems Approach for SDG2

IV. GOVERNANCE

- Enhance policy dialogue
- Strengthen innovation systems
- Adapt investment and finance
- Strengthen the enabling environment

II. CONSERVATION

- Enhance soil health
- Protect water and manage scarcity
- Mainstream biodiversity
- Reduce losses, recycle

III. INCLUSIVITY

- Empower people
- Promote secure tenure
- Link social protection with production
- Improve nutrition

V. RESILIENCE

- Protect against shocks
- Prepare for and respond to shocks
- Adapt to climate change
- Strengthen ecosystem resilience



Accelerating Response

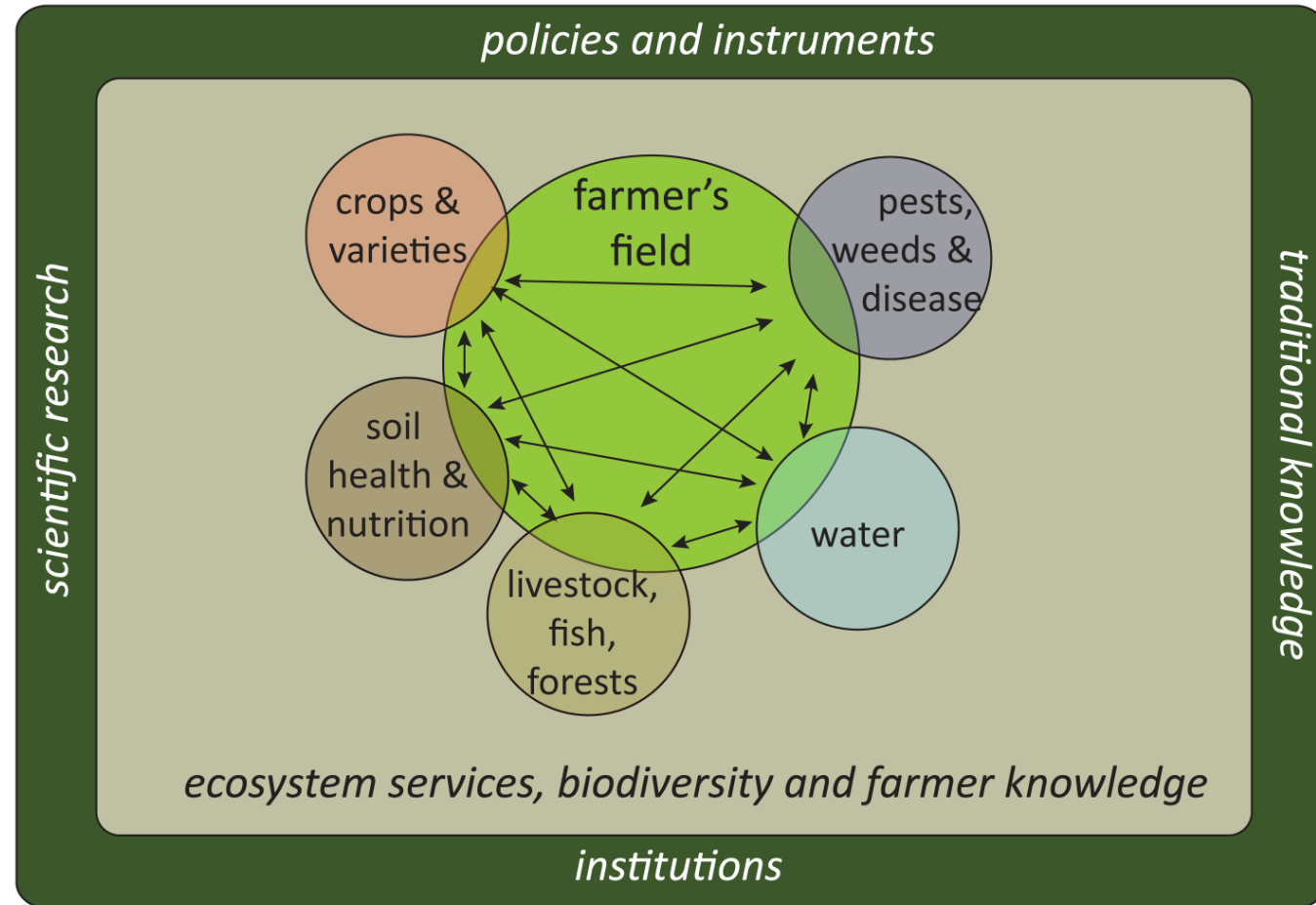
Strengthen the role and use of genetic diversity in agricultural transformation

- Adopt good governance, good practices, monitor and assess their application
- Increase local exchange of genetic resources, seed production, and value chain for them
- Accelerate innovations, digital solutions that address the needs of smallholders and family farmers
- Promote knowledge-exchange between all actors, across institutions
- Widen partnerships and outreach to youth
- Increase resource mobilisation through an integrated approach





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Thank you!



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Transforming food and agriculture to achieve the Sustainable Development Goals (SDGs)

Good practices
from FAO-GEF projects
around the world



GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

Contact
kakoli.ghosh@fao.org



Who will benefit from Sustainable Agriculture

- Small family farmers: About 90 percent of the world's 570 million farms are owned and operated by families. Need of sustainable agriculture to produce more food, create more jobs and preserve the natural resource base.
- Rural women farmers working in farm and off-farm activities, contribute with labor, knowledge of agricultural practices and biodiversity.
- Forest communities who are a billion of the world's poorest relying on forests and trees for food and income. Over years they have created complex agro-ecological and natural resource management systems
- Indigenous peoples: contribute significantly with their wealth of traditional knowledge, spirituality and understanding of ecosystem management.
- Pastoralists – Over 200mn manage rangelands on all continents, mainly dry, cold and mountainous areas and presents the best livelihood strategy
- Small-scale fisheries sector: 90 percent of all people directly dependent on capture fisheries work in the small-scale fisheries sector. Small-scale fisheries contribute about half of global fish catches.

