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TAPE - Tool for Agroecology Performance Evaluation

Animal Production and Health Division (AGA)
Plant Production and Protection division (AGP)
Strategic Program 2 (SP2)

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How do we assess performance in agriculture?



Yield/ha? $/farm? Kcal/person?

Nitrogen leaching/ha? Number of healthy people?

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What is the objective of TAPE ?

To produce global and harmonized evidence on the multi-dimensional performance of agroecological systems.

- **Build knowledge and empower producers** through the collective process of producing data and evidence on their own practices;
- **Support agroecological transitions** at different scales and in different locations by proposing a diagnostic of performances over time and by identifying areas of strengths/weaknesses and enabling/disabling environment;
- **Inform policy makers and development institutions** by creating references on the multi- dimensional performance of agroecology and its potential to contribute to the SDGs.

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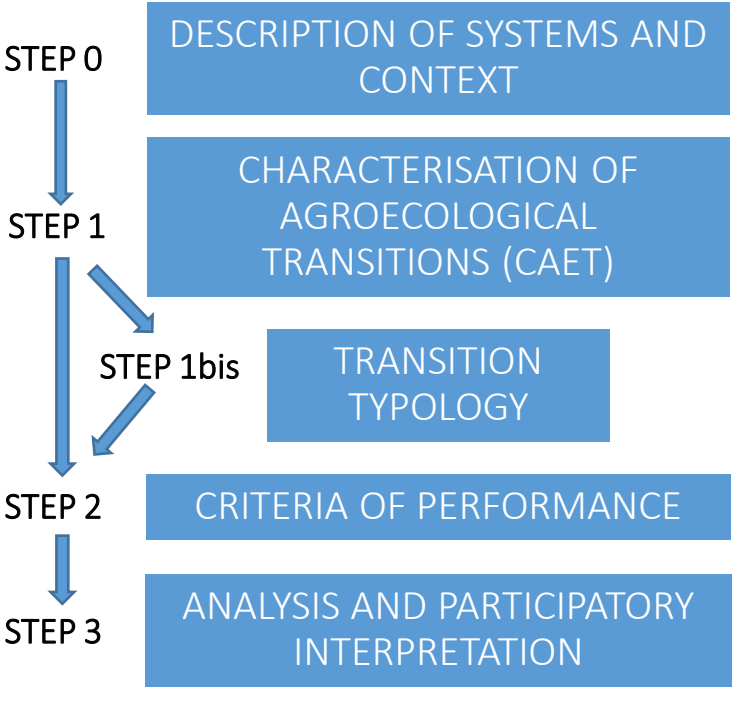
TAPE, step by step



Primary and secondary information:
- Production systems, type of household, agroecological zones
- Existing policies (incl. climate change)
- Enabling environment

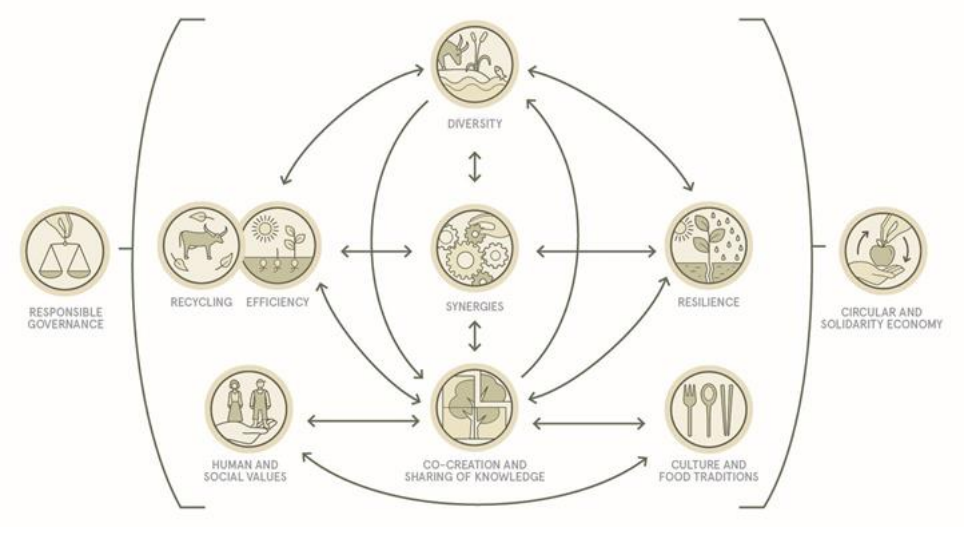
On farm/household survey:
- Describe current status
- Based on 10 elements of agroecology with descriptive scales
- Can be self assessment by producer

Statistical and/or participatory clustering to reduce sample size if large number of observations in CAET

On farm/household survey:
- Measure progress and quantify impact
- Addressing 5 key dimensions for policy makers and SDGs
- Time/cost constraints: keep it simple!

At territory/community scale:
- Review CAET results, explain with context, enabling environment
- Review Performance results and explain with CAET
- Analyze contribution to SDGs

The 10 Elements of Agroecology:
Guiding Transition To Sustainable Food and Agricultural Systems



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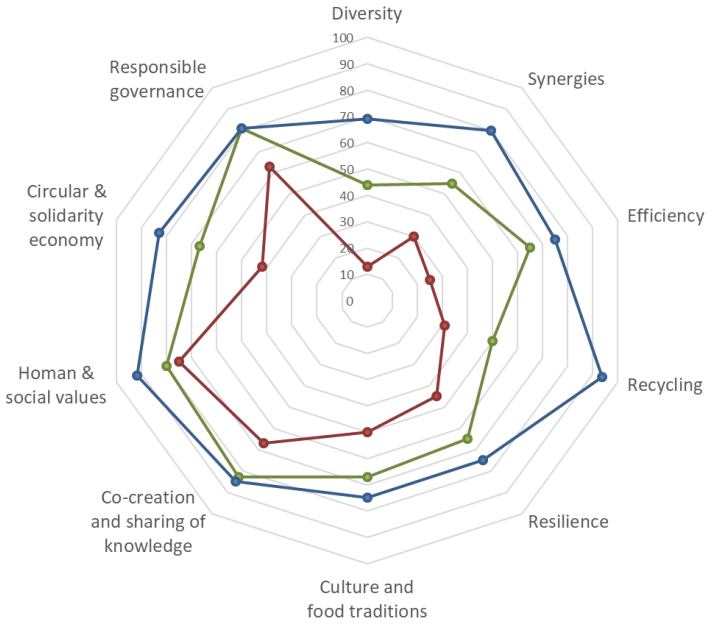
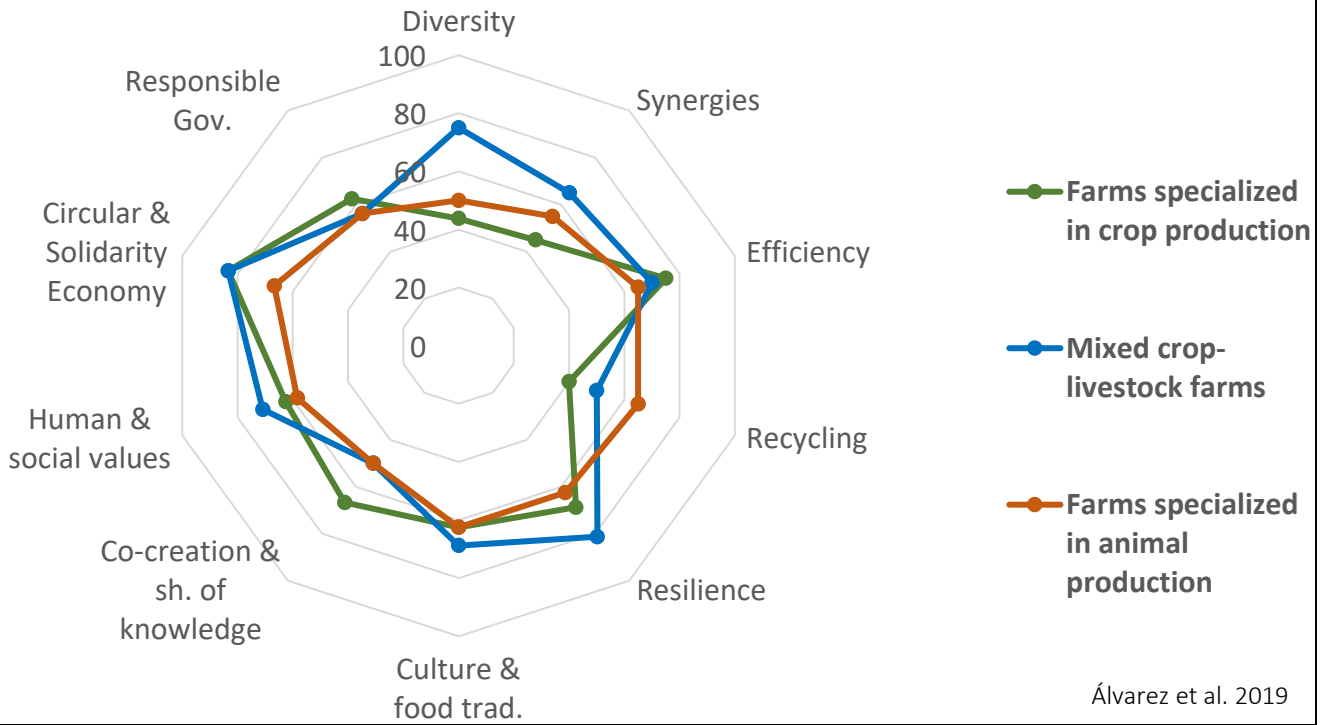
Step 1 CAET – results of 3 farms in Cuba



1) Conventional farm (tobacco monoculture) (CAET=44%)
2) Farm in transition to agroecology (CAET=66%)
3) Diversified agroecological farm (CAET=81%)

Lucantoni, 2020

STEP 1bis : transition typology for type of farms in Argentina



Álvarez et al. 2019

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STEP 2: Core criteria of performance

Main dimension	#	Core criteria of performance	Proposed method of assessment in survey
Governance	1	Secure land tenure (mobility for pastoralists)	Type of tenure over land: property, lease + duration, verbal, not explicit (SDG 1.4.2, 5.a.1 and 2.4.1 sub-indicator 11) Existence and use of pastoral agreements and mobility corridors
Economy	2	Productivity	Gross output value per hectare (SDG 2.4.1 sub-indicator 1) Gross output value per person
	3	Income	Income from crops +animals +other activities +subsidies –inputs –operating expenses –depreciation –taxes –interests (SDG 2.4.1 sub-indicator 2)
	4	Added value	Gross output value –depreciation –expenditures for inputs
Health & nutrition	5	Exposure to pesticides	Quantity applied, area, toxicity and existence of risk mitigation equipment and practices
	6	Dietary diversity	Minimum Dietary Diversity for Women - FAO & FHI (2016)
Society & Culture	7	Women's empowerment	Abbreviated Women's Empowerment in Agriculture Index, A-WEAI (IFPRI, 2012)
	8	Youth employment	Access to jobs, training, education or migration (SDG 8.6.1)
Environment	9	Agricultural biodiversity	Relative importance of crops varieties, livestock breeds, trees and semi-natural environments on farm (SDG 2.4.1 sub-indicator 8.1, 8.6 and 8.7)
	10	Soil health	SOCLA agroecological method to assess soil health, based on 10 indicators (Nicholls et al., 2004)

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STEP 1 and 2 : Example from 2 farms in Cambodia

STEP 1 CAET

STEP 2: Criteria of Performance

Core criteria of performance	Takeo farm	Kampong Chhnang farm
Secure land tenure	Formal document of possession of land	Formal document of possession of land
Productivity	N/A	N/A
Income	12.223 USD	0 USD
Added value	12.330 USD	-1.000 USD
Exposure to pesticides		
Dietary diversity	9/10	5/10
Women's empowerment	93.9%	55.7%
Youth employment	N/A	N/A
Agricultural biodiversity	42%	33%
Soil health	3.2	3.5

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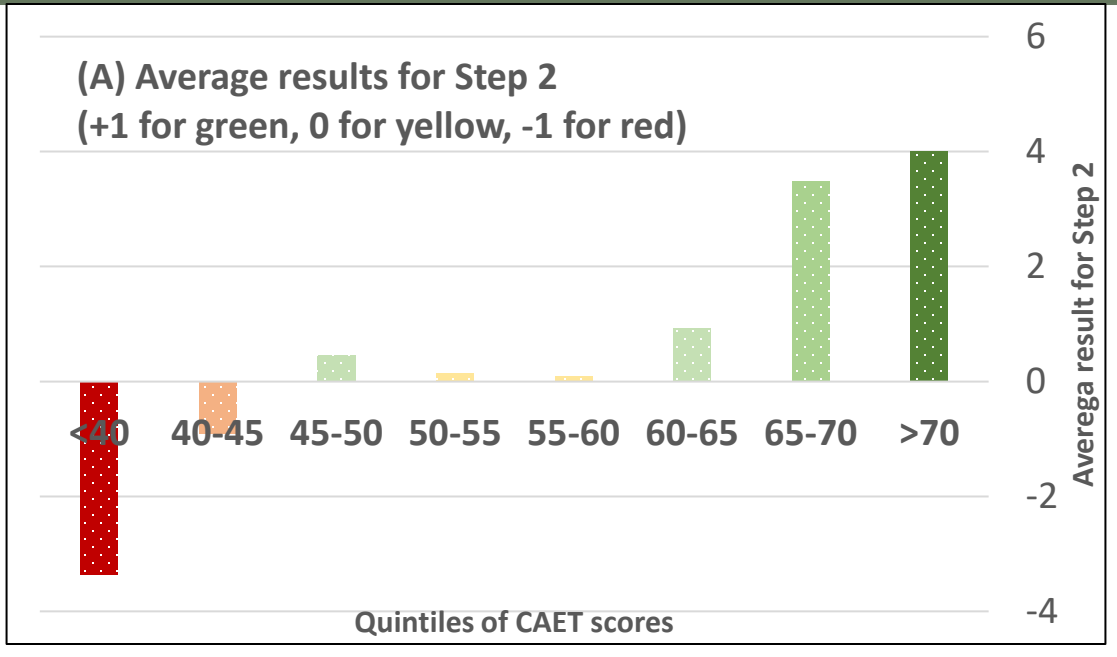
STEP 2 : aggregated results from 228 farms in Cambodia



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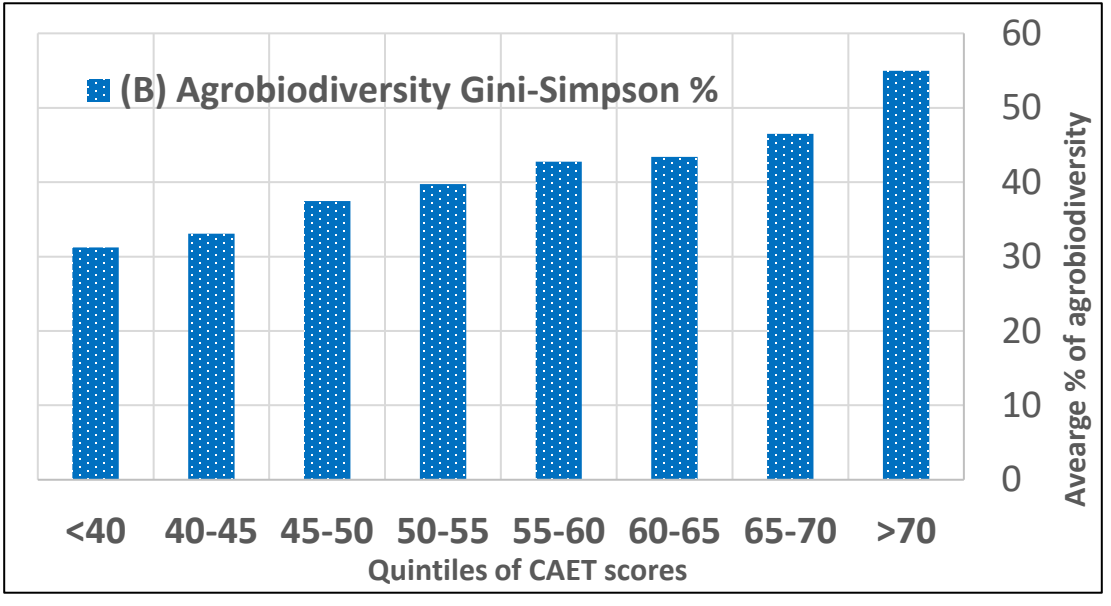

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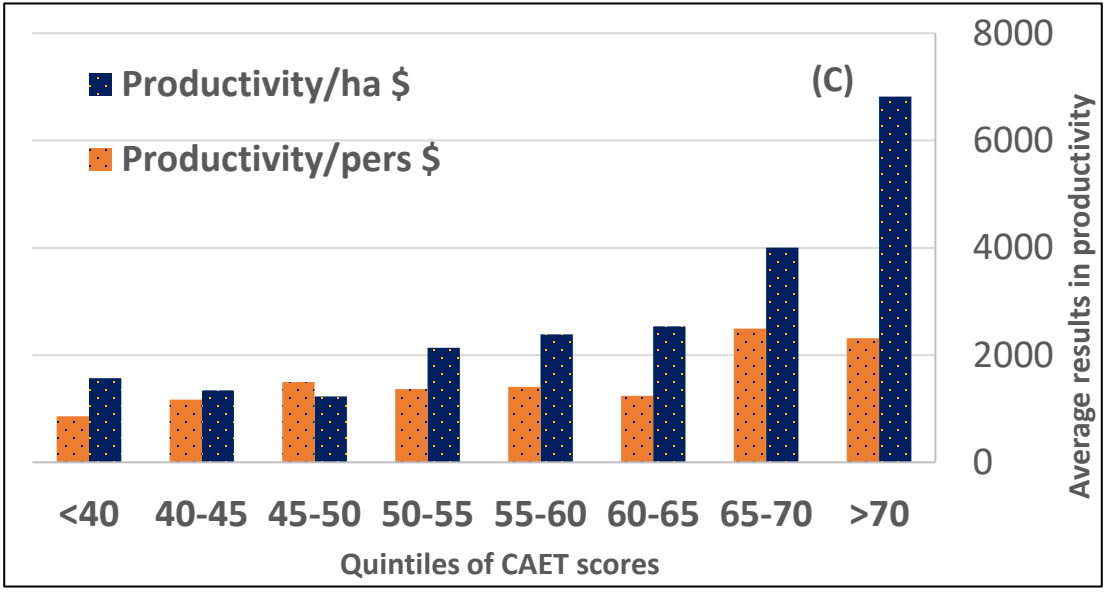

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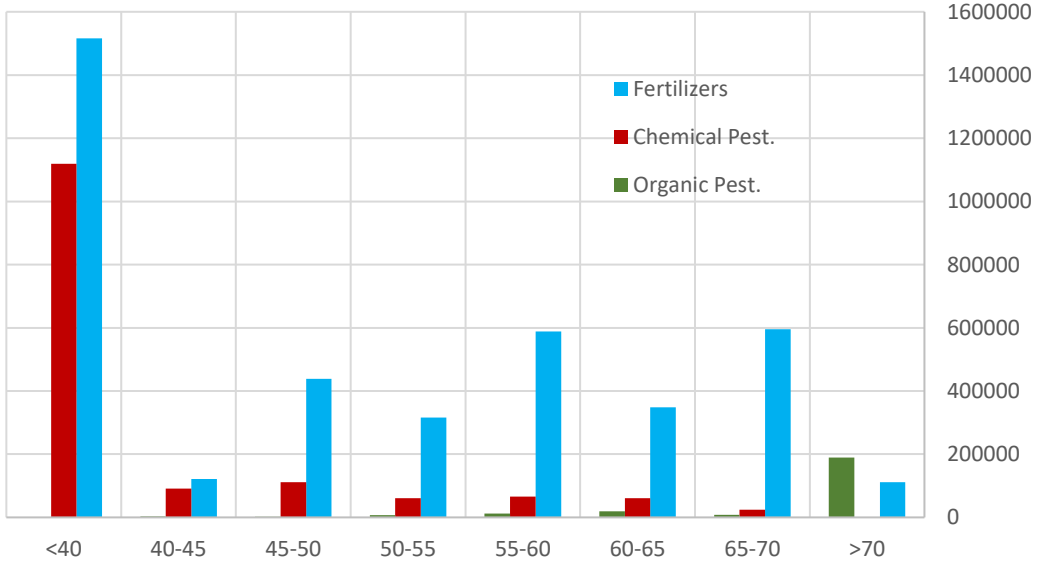

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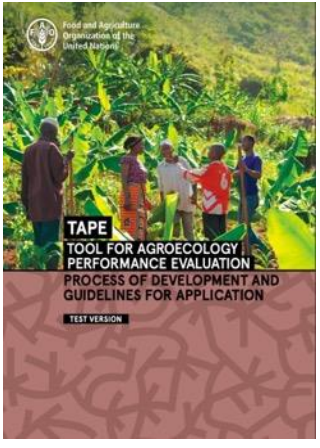
Non exhaustive list of advance criteria

Main dimension	Advanced criteria	Possible methodologies for assessment	SDG
Economy	Resilience	-Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP)	1 2 8
Health & nutrition	Food security & nutrition	- Food self-sufficiency ratio: production x100/(production +purchases -sales) - Nutritional value of agricultural production	2 3
Society & Culture	Decent work Access to market	- Decent Work Indicators for agriculture and rural areas (FAO, 2015) - Territorial Markets (ESN)	8
Environment	Water	-Water use efficiency (e.g. LEAP guidelines for livestock) -Water pollution (e.g. LEAP guidelines on nutrient use)	3 6
	Climate change mitigation	-GHG emissions (e.g. Ex-Act, GLEAM-i, Cool Farm tool) -Carbon sequestration (under development for GLEAM) - GTAE Memento pour l'évaluation de l'agroécologie (Levard et al., 2019)	13

Achievements to date

- 2 regional workshops (RAP and RLC), 2 pilot LoAs (China and Cambodia), 1 regional pilot TCP (Laos and Viet Nam), 2 pilot candidates RLC, 2 in Caribbean
- Pilot with GEF project in Mali as a tool for baseline establishment
- Preliminary and partial test in Senegal
- General interest in collaborating from > 30 academia and civil society organizations
- Interest in funding 1 regional workshop in RAF



http://www.fao.org/3/ca7407en/ca7407en.pdf

On-line tool for data collection

- Using Open Data Kit (Kobo Toolbox)
- Works also offline
- Secured on UN server
- Available on Android mobile devices and all others via URL
- 3 languages: EN, FR, SP

https://ee.humanitarianresponse.info/x/#mEov3aos

Thank you

Members of the Technical Working Group, in alphabetical order: Rachel Bezner-Kerr (Cornell University), Jean-Luc Chotte (Institut de Recherche pour le Développement), Martín Drago (Friends of the Earth International), Barbara Gemmill-Herren (ICRAF-World Agroforestry Center), Allison Loconto (Harvard University/ Institut National de la Recherche Agronomique), Santiago López-Ridaura (CIMMYT/International Maize and Wheat Improvement Center), Bertrand Mathieu (Agronomes et Vétérinaires Sans Frontières), Delphine Ortega (La Vía Campesina), Paulo Petersen and María Noel Salgado (MAELA- Movimento Agroecológico da América Latina e Caribe), Éric Scopel and Jean-Michel Sourisseau (Centre de Coopération Internationale en Recherche Agronomique pour le Développement)

FAO's divisions, AGA (Félix Teillard and Camillo de Camillis), AGP (Edmundo Barrios and Frank Escobar), DPS (Anna Korzenszky), ESN (Florence Tartanac), ESP (Ilaria Sisto, Szilvia Lehel and Jeongha Kim), CBD (Maryam Rahmanian), DPI (Brent Simpson), CBC (Maryline Darmaun), ESS (Piero Conforti and Iswadi Mawabagja) and Decentralized Offices: REU (Carolina Starr), RAP (Pierre Ferrand), RLC (Romain Houlmann and Barbara Jarschel), Anne-Sophie Poisot (AGPM/FAO India)

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