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Tier III Indicators to monitor SDG 2 Targets

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SDG Target 2.3

Indicator 2.3.1 - Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size

Indicator 2.3.2 - Average income of small-scale food producers, by sex and indigenous status

Target and indicators

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- **Target 2.3:** "*By 2030,* ***double the agricultural productivity*** *and* ***incomes of small-scale food producers****, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment*"
- **Indicator 2.3.1** - Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size
- **Indicator 2.3.2** - Average income of small-scale food producers, by sex and indigenous status
- **Problems in the current formulation of the indicators**:
  - ***Volume of production***: Impossible to measure total agricultural production in volume. In reality, value of production in constant prices.
  - ***Income or incomes?*** Only from agriculture or also from other sources?
  - ***Definition of food producers***: including farming, pastoral and fishing activities, but excluding small industrial firms processing food

Key methodological challenges

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- An internationally agreed definition of **small-scale food producers** to compile comparable data across sectors and countries
- Accurate measurement of **agriculture production and labour input** to compile reliable estimates of productivity by enterprise size
- Accurate measurement of **all sources of revenues for the food producers** to compile reliable estimates of their income by enterprise size, sex and indigenous status

Key challenges: data availability

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- Integrated agricultural surveys - privileged source of information not only for these indicators, but also for other essential agricultural data - carried out sporadically in very few developing countries
- Currently the LSMS-ISA, which includes an agricultural module in the LSMS, is the only example of Integrated Agricultural Survey
- Reason for FAO to launch the AGRIS programme. AGRIS (Agricultural and Rural Integrated Survey) is a multipurpose farm survey with rotating modules in a 10-year cycle:
  - a core module, collecting agricultural production & social data every year
  - additional modules (collecting structural data on the farm) every 3-5 years
  - can provide an important contribution to monitoring other SDG targets (e.g. 2.4, 5.a, etc.)

Current work on the indicators

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- **Database on smallholder farmers' income and productivity** already established: data for 20 developing countries using LSMS-ISA type surveys (FAO Smallholders Dataportrait).
- **Development of the AGRIS toolkit** (methodological resources, guidelines and software for the entire survey cycle) available to all countries for adapting it to national needs
- **Establishment of the Global Survey Hub** & GRAInS partnership (FAO, WB, USDA, IFAD) as a one-stop shop for supporting countries in the implementation of Integrated Agricultural Surveys
- **Resource mobilization** to scale-up the adoption of AGRIS (almost secured DfID and USAID funding, negotiations with BMGF)

Plans to develop the methodology

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- **IAEG on Agricultural Statistics** (FAO, ILO, IFAD, World Bank + countries) to discuss methods & international definitions in 2016/2017
- **Global consultation** on international definitions in 2017 and proposal submitted for **UNSC** endorsement in 2018
- **Pilot testing AGRIS** in a limited number of countries in 2016
- Full implementation of **AGRIS** starting at the end of 2016
- **National implementation**: customization of generic questionnaires and alignment with national priorities (NSDS – SPARS) in 2017
- **Establish mechanisms to collect data**, compute and report indicators using national statistical systems from 2017

Global reporting mechanism

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- Institutionalize AGRIS in the national Statistical Master Plans
- Scale-up the adoption of AGRIS in developing countries; WB commitment to support LSMS-ISA in 78 countries in the next 3 years
- Establish regional survey hubs for supporting global implementation
- Build capacity in national statistical systems to compile SDG indicators 2.3.1 & 2.3.2 and periodically report data to FAO
- Develop a methodology to impute productivity and income of small-scale food producers to compile regional and global aggregates when country data are not available (with prior national validation)
- Global Hub as a knowledge center for methodology documentation and archiving & dissemination of micro-data
- Country data on SDG indicators to be reported in FAOSTAT and in the UNSD SDG database

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SDG target 2.4

Indicator 2.4.1 - Percentage of agricultural area under productive and sustainable agriculture

Target and indicators

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- **Target 2.4**: "*By 2030,* ***ensure sustainable food production systems*** *and* ***implement resilient agricultural practices*** *that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality*"
- **Indicator 2.4.1**: Percentage of agricultural area under productive and sustainable agriculture
- **Limitation**: resilience not covered
- **Definitions**:
  - **Denominator**: agricultural area is the sum of arable land + permanent crops + permanent meadows and pastures (available in FAOSTAT)
  - **Numerator**: Land areas under productive and sustainable agricultural practices are those where indicators selected across the environmental, economic and social dimensions reach certain predefined values

Current work on the indicator

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- **Methodological development:**
  - Select the indicators along the social, economic and environmental dimensions that constitute the components of indicator 2.4.1
  - Define the thresholds for sustainable agricultural practices; alignment with indicator 15.2.1 on sustainable management of forest
  - Harmonize data across countries
  - Identify the most suitable data sources
- **Testing the methodology**: prototype versions tested in two pilot countries (Rwanda and Morocco) as part of efforts towards assessing their agricultural sustainability
- **Set-up a process for reviewing the methodology**

Process to develop the methodology

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- **Peer review process:**
  - Expert meeting planned in mid-2016 to finalise the list of the sub-indicators used to develop the SDG indicator & Review the proposed methodology
  - IAEG on Agriculture Statistics
  - Other agencies and organisations to be involved: UNEP (UNCBD; UNCCD; UNFCCC); IFAD; WFP; CGIAR (incl. IFPRI); World Business Council for Sustainable Development; Farmers' Federations.
- **Develop a standard questionnaire** and methodological guidelines on how to collect data on sustainable agricultural practices in farm surveys
- **Promote the adoption of AGRIS** to support the production of 2.4.1 and other SDG2 indicators
- **In 2016 field testing AGRIS** in selected countries, representative of a variety of agricultural situations

Global reporting mechanism

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- National Statistical Agencies in charge of producing country data. To the extent possible, the indicator will rely on information already available at national level (farm surveys and other data sources)
- FAO will promote the use of the agreed questionnaire in national surveys
- FAO will provide technical assistance in the implementation of AGRIS to countries that do not to collect the necessary information
- The indicator is expected to be produced on a global scale, covering both developed and developing countries and all regions.
- Global reporting is expected to start in 2018 once the field testing is completed. The proof of concept studies will inform on modalities, costs and time frame for global reporting
- Country data on SDG indicators to be reported in FAOSTAT and in the UNSD SDG database

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SDG target 2.c

Indicator 2.c.1 - Indicator of food price anomalies (IFPA)

Target, Indicator & Definition

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- **Target 2.c**: "Adopt measures to ensure the **proper functioning of food commodity markets** and their derivatives and facilitate **timely access to market information**, including on food reserves, in order to help **limit extreme food price volatility**"
- **Indicator 2.c.1**: Indicator of food price anomalies (IFPA)
- **Definition**: The IFPA measures the number of "Price Anomalies" that occur for a food commodity price series over a given period of time
- **Application.** The algorithm can be applied to:
  - prices of primary food commodities at the retail level in national markets (limit the impact of price volatility on food security)
  - prices of primary food commodities in international markets (ensure proper functioning of food commodity markets)

Method of computation

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Step 1. Computing the annual compound growth rate (CGR)

- $CGR_{t_n} = \left(\frac{P_{t_n}}{P_{t_0}}\right)^{\frac{1}{t_n - t_0}} - 1$, where P_{t_n} price at time t_n and P_{t_0} price at time t_0

Step 2. Computing the weighted average and standard deviation of the CGR

- The mean and standard deviation of observed CGR values define what is considered to be "normal" volatility for the particular price series being considered
- Declining time weights are used to make sure that more recent price dynamics is not overshadowed by past extreme events which could prevent the detection of significant market shocks on prices.

Step 3. Computing the indicator of price anomalies

- A "Price Anomaly" is defined as the recording of a difference between the monthly CGR and the historic average CGR, greater than one standard deviation
- The frequency of price anomalies ($IFPA_t$) is then computed for the annual CGRs and the final indicator of price anomalies for month t.

Current work & plans on the indicator

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1. Indicator **currently used as early warning tool** by FAO to identify abnormally high prices. Results currently reported in FAO's Food Price Monitoring and Analysis (FMPA) website
2. **Methodology peer-reviewed** by external experts (including academia, WFP, FEWSNET and practitioners of the early warning community)
3. **Plans for further methodological development** of the indicator:
   - Expand the country coverage
   - Model-based imputations to fill in the data gaps and to estimate regional and global values of the indicator (prior national validation)
   - Aggregation of price data of main local markets to produce nationally representative prices
4. **Capacity development** for compiling prices of food commodities and the IFPA and report them to FAO

Global reporting mechanism

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- FAO's FMPA price tool publically **available since 2009**; progressively improved over time
- Price data are **mainly obtained by national statistical authorities** (NSOs, MoAs or Central Banks) or from their official websites
- **Country coverage**: currently 95 countries and more than 1400 price series.
- **Plan to expand the coverage** to some important developing countries (e.g. South Sudan) and to developed regions
- **Availability of data also for the main local food markets**
- An updated version of the FPMA Tool will automatically report the indicator for the prices series available in the tool

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SDG target 2.5

Indicator 2.5.1 Number of plant and animal genetic resources for food and agriculture secured in either medium or long term conservation facilities

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Target, Indicator & Definition

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- **Target 2.5**: "By 2020, **maintain the genetic diversity of seeds**, **cultivated plants and farmed and domesticated animals** and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and **promote access to and fair and equitable sharing of benefits** arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed"
- **Indicator 2.5.1**: Number of plant and animal genetic resources for food and agriculture secured in either medium or long term conservation facilities

Target, Indicator & Definition

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- **Definition**: The indicator is a dynamic measure of the earth plant and animal diversity which is conserved in gene banks across time.
- The conservation of plant and animal genetic resources for food and agriculture (GRFA) in medium or long term conservation facilities (ex situ) represents the most trusted means of conserving genetic resources worldwide.
- Plant and animal GRFA conserved in these facilities can be easily used in breeding programmes as well, even directly on-farm.
- The measure of trends in ex situ conserved materials provides an overall assessment of the extent to which we are managing to maintain and/or increase the total genetic diversity available for future production and thus protected from any permanent loss of genetic diversity occurring in situ.

Current work on the indicator

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The two components of the indicator, plant and animal genetic resources for food and agriculture, will be separately counted.

- The **plant component** will be calculated as the number of accessions of plant genetic resources secured in conservation facilities, where an 'accession' is defined as a distinct sample of seeds, planting materials or plants which is maintained in a gene bank.
- For the **animal component**, the number of local breeds with a quantity of genetic material stored within a genebank collection sufficient to reconstitute the breed

Current work on the indicator – Plant component

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- This component monitors the implementation of the Second Global Plan of Action adopted by the Commission on Genetic Resources for Food and Agriculture
- The indicator applies the FAO/Bioversity Multi-Crop Passport Descriptor (MCPD) v. 2, an international standard for PGRFA information exchange.
- The plant component of the indicator is being calculated by FAO in 2016. A total of 3.57 million accessions conserved in 74 countries will be documented by end of April 2016.
- Reporting from these countries are planned to occur again in 2018 as agreed by member countries at the 15th Session of the Commission of Genetic Resources of Food and Agriculture

Current work on the indicator – Animal component

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- This is a new metric with regard to animal genetic resources. The mechanism for reporting the necessary information has, however, been available to countries for 10+ years, through the Domestic Animal Diversity Information System (DAD-IS; dad.fao.org).
- Specifically, for each animal genetic resource (defined as a breed) countries may record the number of animals involved in vivo conservation banks and the quantity and types of germplasm stored in *in vitro* conservation banks.
- Up to now, not regularly reported by countries as not been part of an official indicator.

Plan to develop the methodology and international standard

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- Plant component: For this component the methodology is already established and applied. However, there are a significant number of countries whose ex situ collections documentation levels need to be improved in order to meet the standards required for contributing to the indicator.
- Animal component: The methodology is a simple counting exercise, assuming the data are reported in DAD-IS. The indicator would, however, be subject to endorsement by the Commission on Genetic Resources for Food and Agriculture (CGRFA) prior to being recognized as an international standard.

Global reporting mechanism

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- Plant component:
  - Country data are stored in WIEWS, the FAO PGRFA information system. Frequency of data reporting could be annual.
  - data collection is an on-going activity. A snapshot of the current status will be made in May 2016. However coverage of countries could be improved.
- Animal component:
  - Countries would be requested by the CGRFA to report these data as a part of routine reporting on the status of their animal genetic resources.
  - data collection is an on-going activity. FAO reports biannually to the CGFRA the "status and trends" of animal genetic resources
- All regions will be covered

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Thank you for your attention

Questions are most welcome!