



Food and Agriculture Organization  
of the United Nations

# New approaches to data collection on National Agricultural Research Systems

Regional Workshop for Asia-Pacific  
Bangkok, Thailand, 15-17 January 2025



## Workshop Objectives



Introduce the ASTI transition into FAO and the new operational mechanisms



Discuss strategies to enhance the long-term institutionalization of ASTI and to maximize policy uptake of ASTI outputs at the national level



Initiate interinstitutional dialogues to build a common understanding of roles and responsibilities in the new approach



Train participants on the ASTI methodology, data management portal, data collection and survey processing monitoring



Discuss and collectively formulate an agreed action plan and way forward for ASTI institutionalization at the national and global level

# Workshop agenda

## Day 1: Wednesday 15 January

09:00 - 09:30	Accreditation
09:30 - 10:30	Opening remarks and introduction of participants
10:30 - 11:00	Coffee break (Group photos and interviews)
11:00 - 12:00	Introduction to the ASTI program and to the process of transition into FAO
12:00 - 13:00	Lunch break
13:00 - 14:00	New approach to data collection and institutionalization in countries
14:00 - 15:00	Uses of ASTI: Analyzing regional trends and characterization of Agricultural R&D Systems in Asia and the Pacific region
15:00 - 15:20	Coffee break
15:20 - 16:00	Country experience
16:00 - 16:30	Group Discussion (sharing of opportunities and challenges for ASTI implementation)
16:30 - 18:00	Welcome cocktails

# Workshop agenda

## Day 2: Thursday 16 January

09:00 - 09:30	Summary of Day 1
09:30 - 10:00	Country experience
10:00 - 11:00	Country experience and discussion
11:00 - 11:20	Coffee break
11:20 - 12:30	Review of ASTI methodology: definitions and questionnaires
12:30 - 13:30	Lunch break
13:30 - 14:30	Operational mechanisms: data collection, processing, analysis
14:30 - 15:30	Operational mechanisms: data visualization and publication
15:30 - 15:45	Coffee break
15:45 - 16:30	Group Discussion(sharing of opportunities and challenges for ASTI implementation)

# Workshop agenda

## Day 3: Friday 17 January

09:00 - 09:30	Summary of Day 2
09:30 - 10:45	Identify fit-for-purpose model for countries: Cluster Exercise
10:45 - 11.00	Coffee break
11:00 -12:00	Group exercises: action plans development on ASTI in-country implementation
12:00 - 12:30	Presentation by countries: ASTI in-country implementation action plans
12:30 - 13:30	Lunch break
13:30 - 15:00	Presentation by countries: ASTI in-country implementation action plans
15:00 - 15:30	Coffee break
15:30 - 16:00	Summary of the workshop and closing remarks

# Introduction of participants

- In 30 seconds please tell us:*
- *Your name*
  - *Country and institution*
  - *Your expectations of the workshop*







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## Session 1: Introduction to ASTI and the transition into FAO

Regional Workshop for Asia-Pacific  
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# Introduction to ASTI & transition to FAO

1. What is ASTI?
2. Users
3. Regional networks
4. Coverage
5. ASTI data and uses
6. History of ASTI
7. Transition of ASTI to FAO
8. Challenges and opportunities of the ASTI data update





## What is ASTI?

### A global reference on agriculture R&D investments and capacity of NARS

The Agricultural Science and Technology Indicators (ASTI) collects institutional investment, human resource, and research output data from agricultural R&D agencies in developing countries worldwide

Why ASTI: quantitative data are essential for stakeholders to:

- analyze trends in agricultural R&D capacity, investments, and outputs
- better coordinate agricultural R&D across institutes, regions, and commodities
- identify gaps
- set future investment priorities



## Users of ASTI

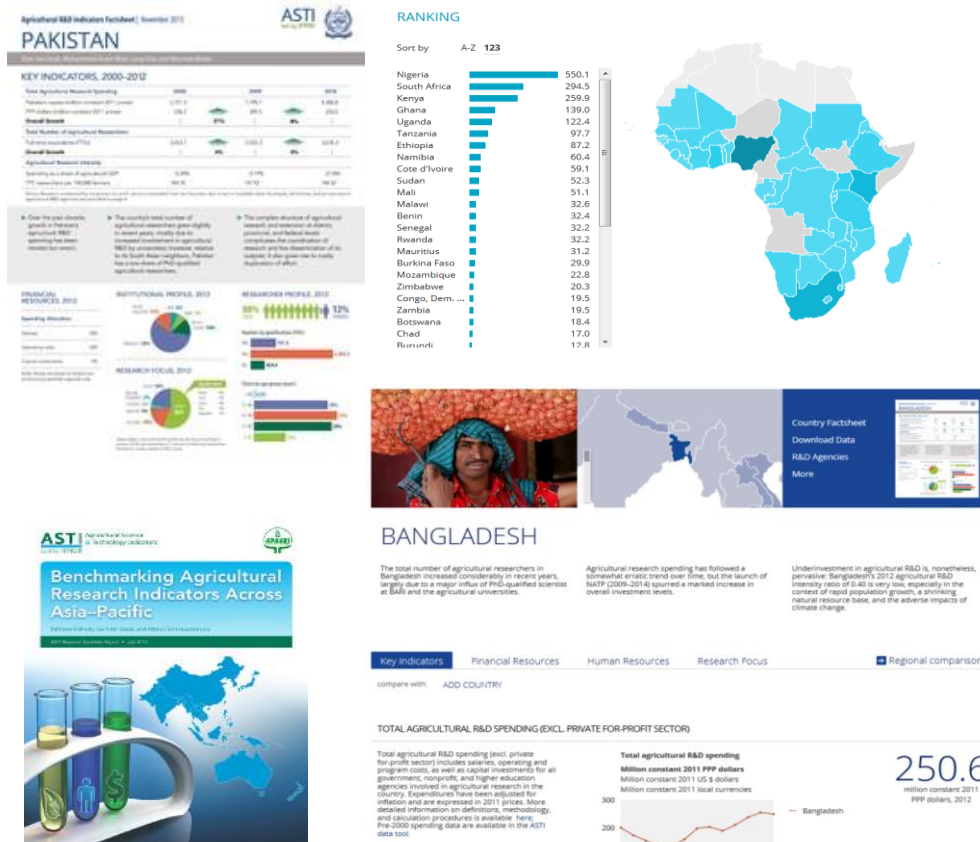




## Regional Networks



# ASTI Data



## ASTI indicators

- Institutional arrangements
- R&D spending by cost category
- Funding sources
- R&D staff by degree, gender, and age
- R&D focus by commodity and theme
- Output indicators

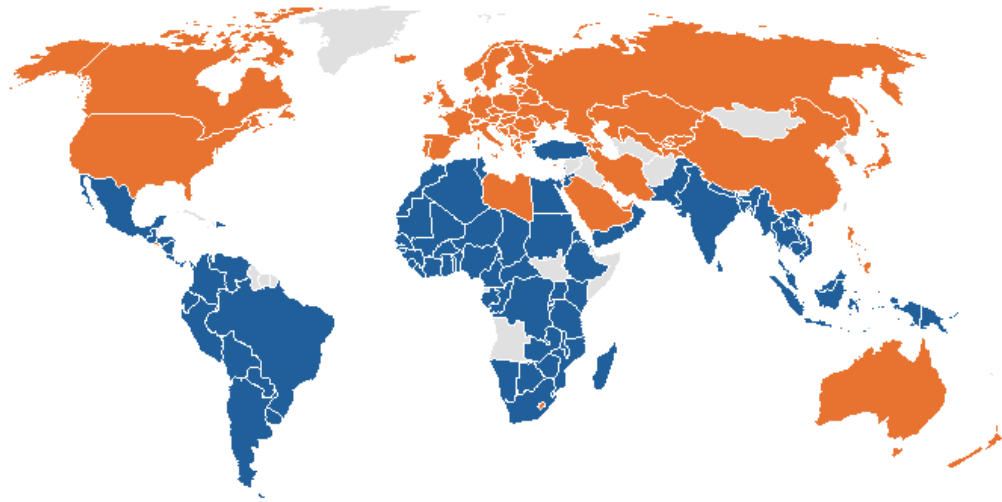
## Outputs

- Country factsheets
- Regional and global synthesis reports
- Online datasets and tools ([www.asti.cgiar.org](http://www.asti.cgiar.org))



# ASTI Country Coverage

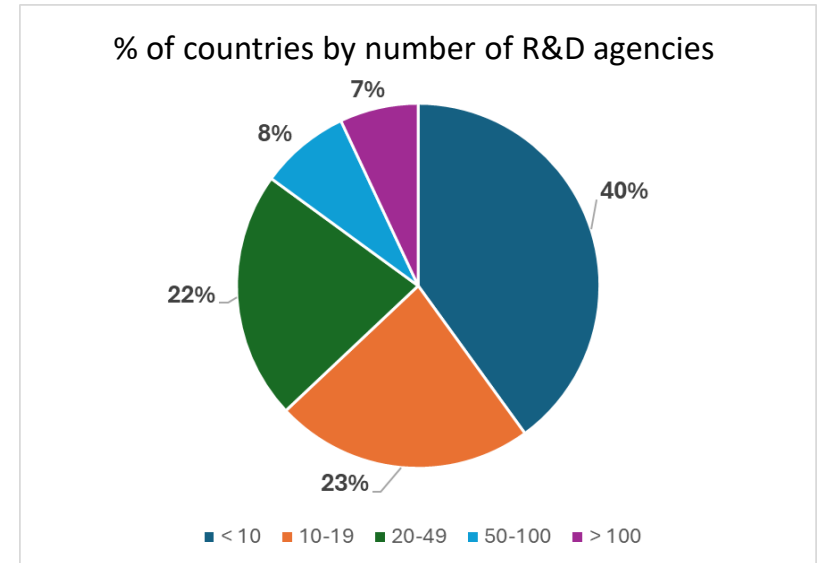
Between 1981 and 2018, ASTI collected data from ~100 countries and 3,100 R&D agencies



■ New ASTI in FAO Dataset  
■ Current ASTI

FAO plans to extend the coverage of the dataset to all member countries

Data are available at R&D agency level and by institutional sector

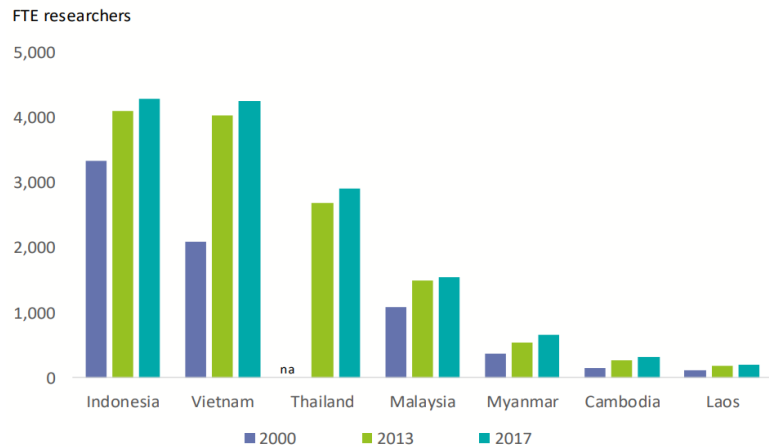


More than 60% of NARS have fewer than 20 agencies.

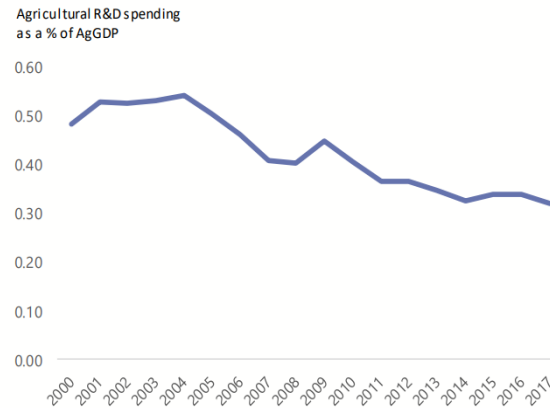
# Uses of ASTI – Global/Regional/National perspectives

- I. Characterization of Agricultural Research Human Capital
- II. Trends in Investment in Agricultural Research
- III. Global R&D agencies directory

FTE agricultural researchers by country, 2000, 2013, and 2017

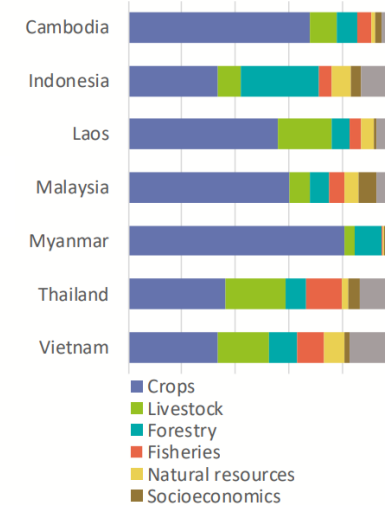


Agricultural research spending as a share of agricultural GDP, 2000–2017



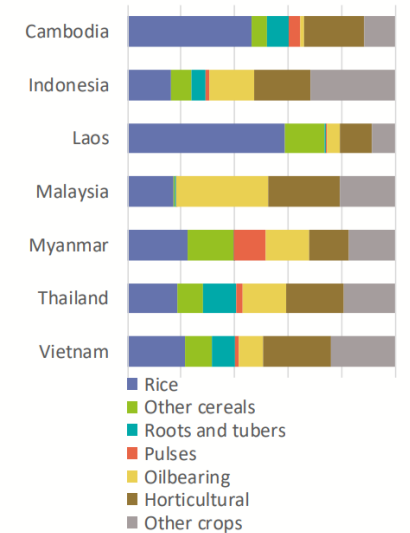
Research focus by commodity group, 2017

Share of total FTE researchers  
0% 20% 40% 60% 80% 100%

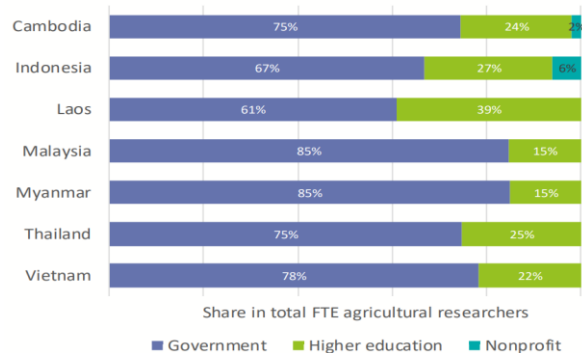


Research focus by crop category, 2017

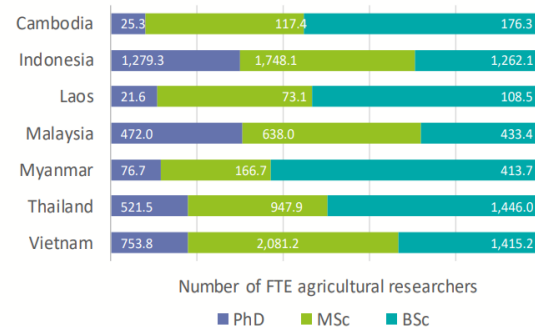
Share of total FTE crop researchers  
0% 20% 40% 60% 80% 100%



Institutional composition of agricultural R&D, 2017



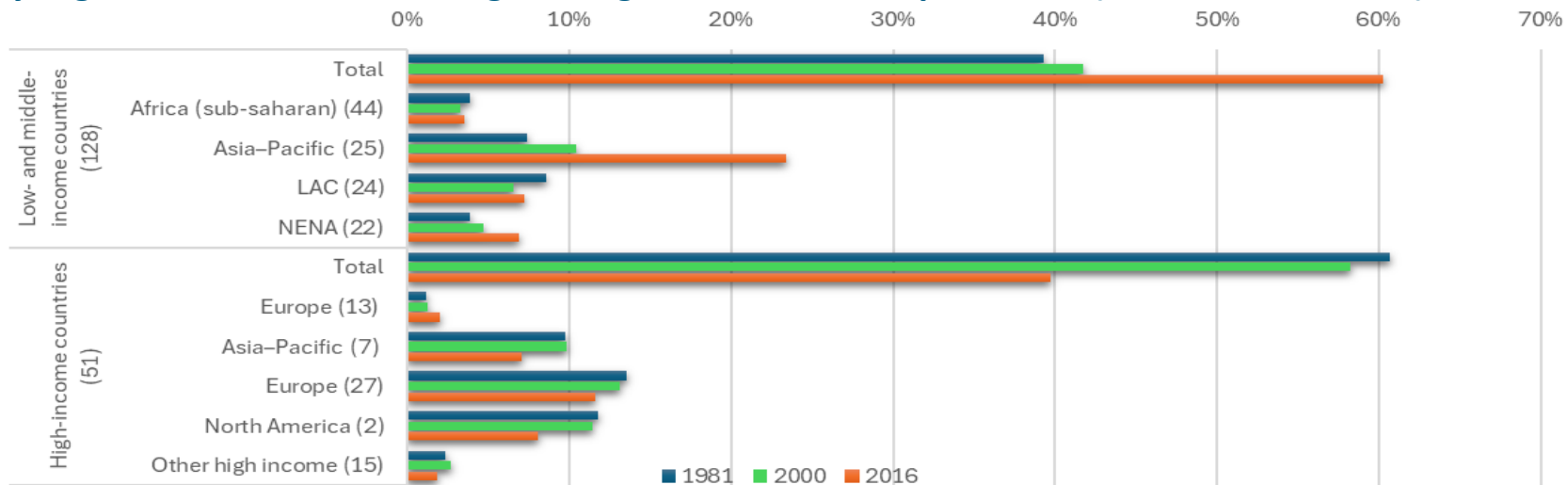
Distribution of agricultural researchers by degree, 2017



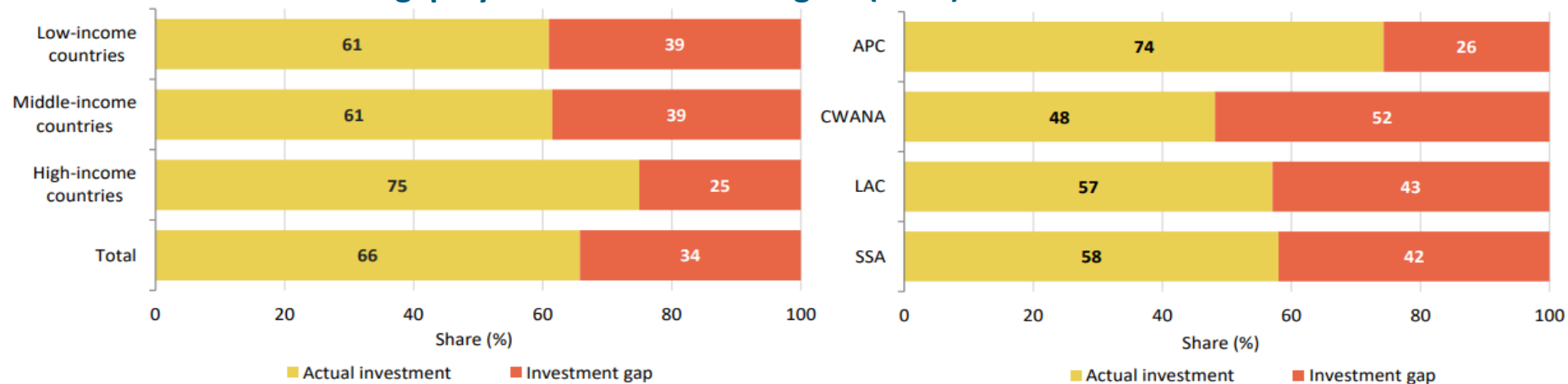


# Uses of ASTI – Regional analysis

Share by region and income level in global agricultural R&D expenditure (1981, 2000 & 2016)



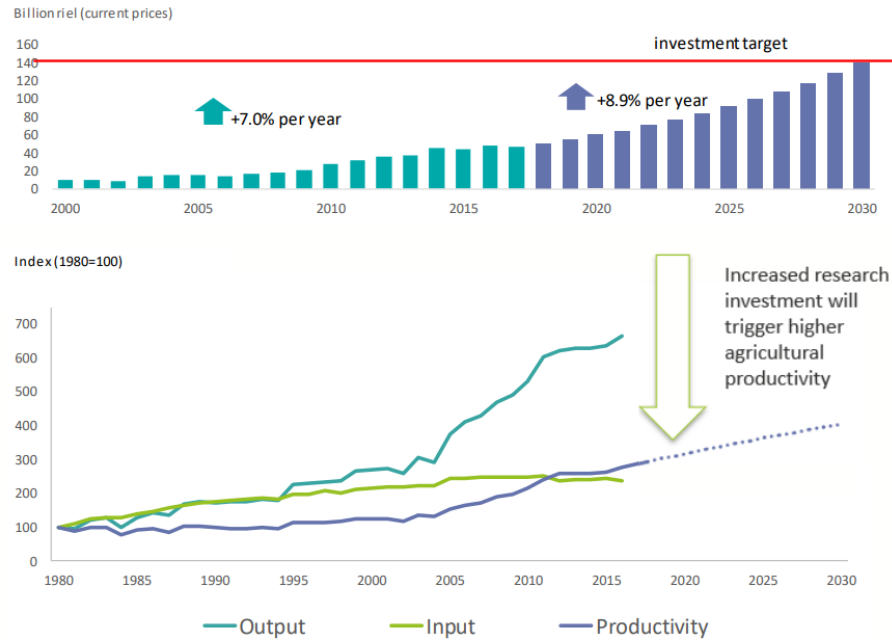
## Agricultural research investment gap by income level and region (2016)



# Uses of ASTI – National/Sectoral/Institutional perspectives

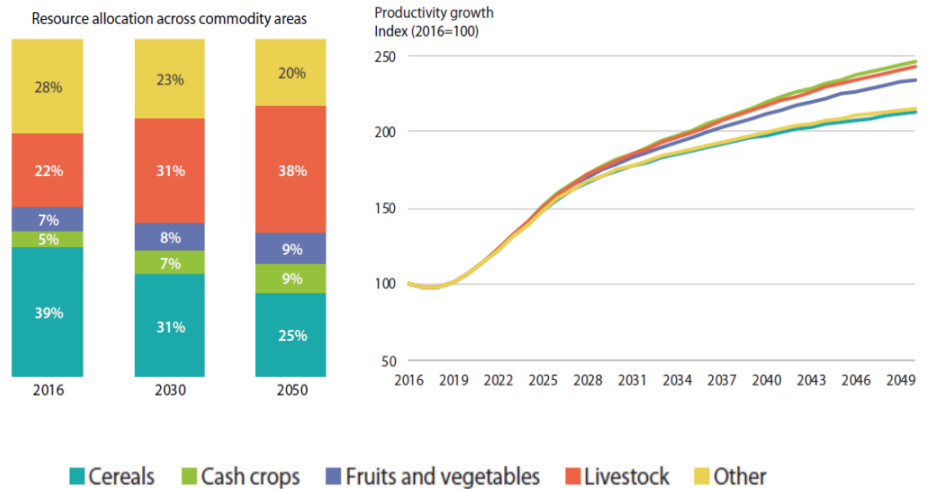
## Advanced analysis & informing policy options

Projected annual R&D spending and productivity growth, 2017–2030



**Closing the gap in investment in Agricultural Research will drive future productivity growth**

Agricultural productivity projections for selected commodity groups based on attainable rates of research investment, 2016-2050



**Productivity growth under alternative investment scenarios**

# Introduction to ASTI survey history and implementation methodology

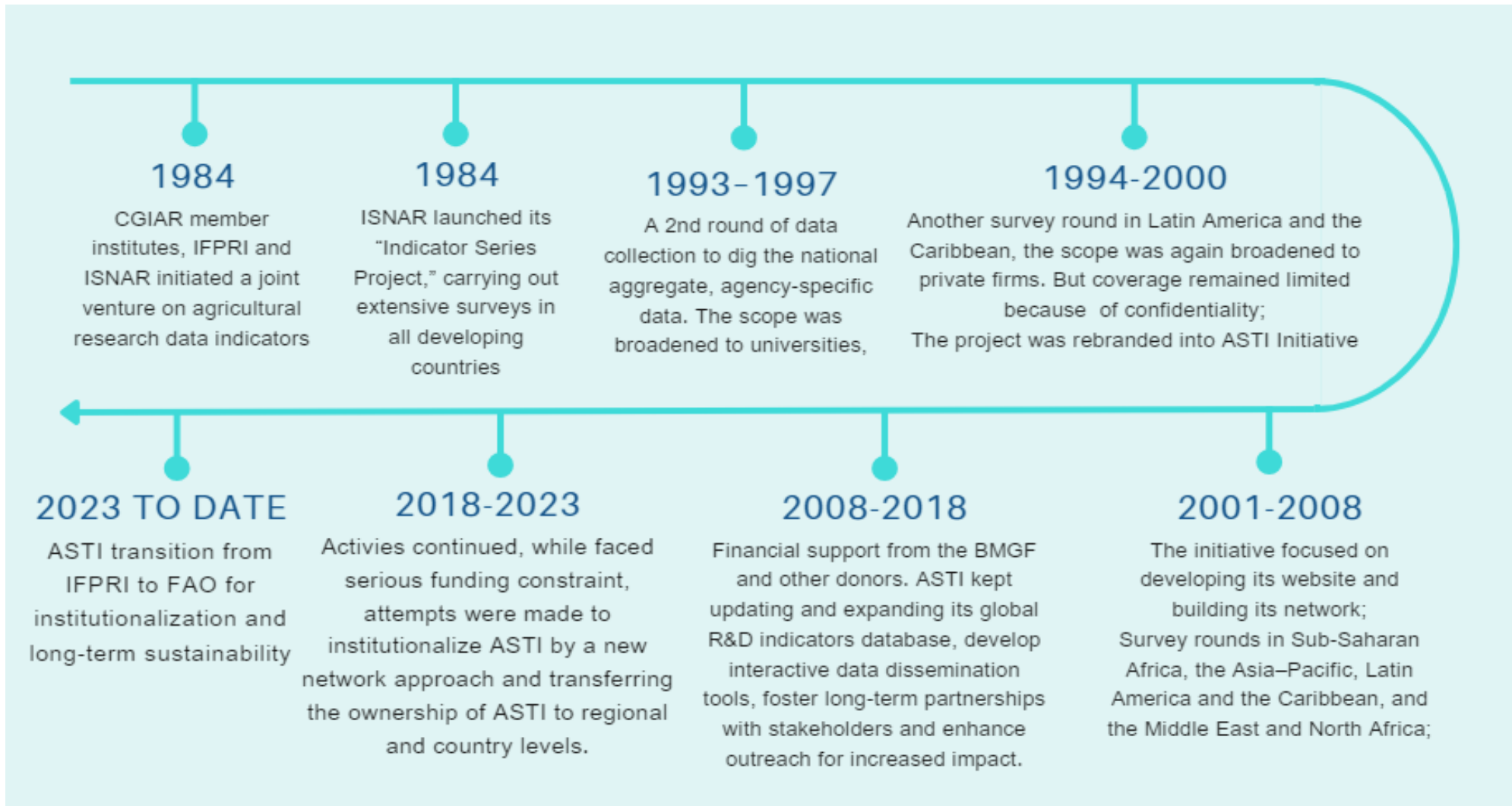
## Historical origins of the ASTI survey

- The ASTI surveys were initiated by IFPRI in response to the gap between research data availability in the Organization for Economic Co-operation and Development (OECD) countries and most of the developing economies in the Global South
- The methodology of the ASTI survey aligns with the Frascati Manual developed by the OECD and partners, which ensures compatibility of the data over time.
- The scope of ASTI is agricultural research and experimental development (R&D): *“Creative and systematic work undertaken in order to increase the stock of knowledge [...] and to devise new applications of available knowledge”*
- Agricultural R&D (adopted by ASTI): Crops, livestock, forestry, fisheries, natural resources, and the socioeconomic aspects of primary agricultural production. On-farm storage and processing of agricultural products.





## ASTI Initiative: Past & Present





The ASTI Network bridges the data-to-impact gap by providing data, analyses, and outreach to inform policy and investment decisions in agricultural research.

## ASTI is moving from IFPRI to FAO



ASTI is pleased to announce that its program will be transitioning to FAO. This move marks a significant milestone in ensuring the long-term continuity of ASTI's valuable agricultural research data. As part of FAO's broader Agrifood Systems Technologies and Innovations Outlook, ASTI will continue to provide its data and analysis while also expanding its focus to include a broader set of data on R&D for agrifood systems. During the transition process, the existing ASTI website will remain fully functional, ensuring uninterrupted access to data and publications. We are grateful for your sustained support of ASTI over the years and excited to embark on this new journey with FAO. Stay tuned for updates on our progress!

# Why is ASTI relevant to FAO?

## ➤ FAO Science and Innovation Strategy (2022)

- ...*"Research for development demonstrates a clear path to impact development outcomes"*...
- ...*"FAO will promote public investments in research and support the strengthening of capacities of regional, national and local research and higher education institutions"*...

**ASTI data are global public good to identify R&D investment and capacity gaps.**

## ➤ AgriFood Systems Technologies and Innovations Outlook (ATIO)

- ATIO seeks to inform public and private sector decision making at all STI life cycle, which starts with **Research inputs**.
- The first flagship report will be launched in 2025

**Regular production of ASTI core data needs to be resumed as an input for ATIO**



# FAOSTAT: ASTI data series are discontinued

Data

DOMAINS    DOMAINS TABLE

- ▶ Production
- ▶ Food Security and Nutrition
- ▶ Food Balances
- ▶ Trade
- ▶ Prices
- ▶ Cost and Affordability of a Healthy Diet
- ▶ Land, Inputs and Sustainability
- ▶ Population and Employment
- ▶ Investment
- ▶ Macro-Economic Indicators
- ▶ Food Value Chain
- ▶ Climate Change: Agrifood systems emissions
- ▶ Forestry
- ▶ SDG Indicators
- ▶ World Census of Agriculture
- ▶ Discontinued archives and data series
  - Indicators from Household Surveys (gender, area, socioeconomic)
  - ASTI-Researchers
  - ASTI-Expenditures
  - Food Aid Shipments (WFP)
  - Machinery
  - Machinery Archive
  - Fertilizers archive
  - Producer Prices (old series)

ASTI-Researchers

DOWNLOAD DATA    VISUALIZE DATA    METADATA

COUNTRIES    REGIONS    SPECIAL GROUPS    M49 -

Filter results e.g. algeria

- Algeria
- Antigua and Barbuda
- Argentina
- Bangladesh
- Barbados

Select All    Clear All

ELEMENTS

Filter results e.g. researchers, total

- Researchers, total
- Per 100,000 farmers

Select All    Clear All

ITEMS

Filter results e.g. agricultural researchers (fte)

- Agricultural researchers (FTE)

Select All    Clear All

YEARS

Filter results e.g. 2016

- 2016
- 2015
- 2014
- 2013
- 2012

Select All    Clear All



## FAO-ASTI project objectives

- ❖ The overarching goal is to standardize, harmonize, and improve the overall quality, timeliness, and completeness of the ASTI dataset, while making it more sustainable and country owned
- ❖ Harmonization and standardization, as well as country ownership and awareness will also be fostered and institutionalized through UN system mechanisms, including regional and global statistical commissions

# Current implementation and use of ASTI data

## *ASTI data collection challenges...*

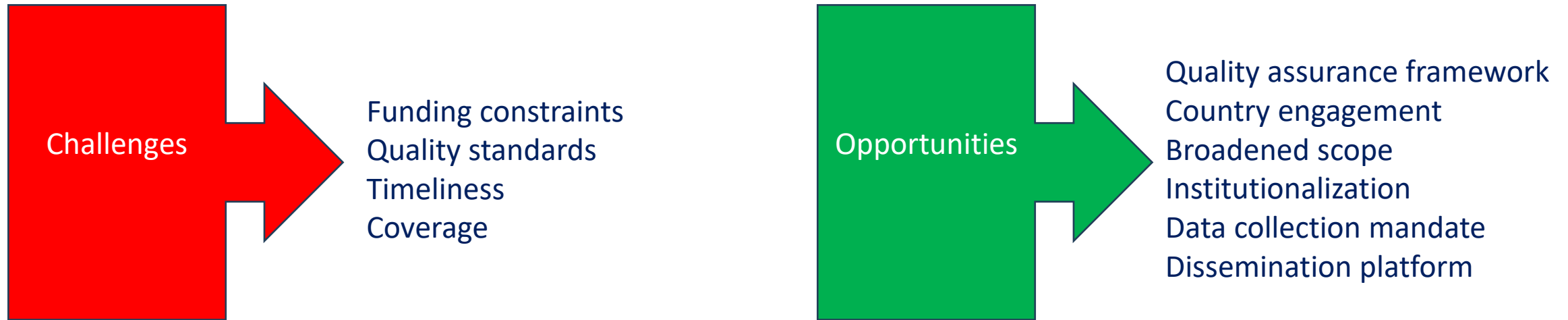
- Reliance on project-based funding
- Lack of a clear mandate for data-collecting agencies
- Non-official status of data for UN organizations
- Low frequency of data release
- Reduced use in the country
- Excessive burden on data providers
- Data incompleteness and consistency risks



# ASTI data collection

## Challenges and opportunities

ASTI data collection has encountered various challenges in the past. Its integration into FAO presents an opportunity to revitalize and propel it to unprecedented levels of success.



### Structural challenges:

- Large number of diverse institutions (government, education, non-profit, and private)
- Funding from multiple sources (gov. budgets, donors, private sector, product sales, etc)

# Pathway towards sustainability of ASTI

## *ASTI transition process, targets & milestones*

- **2023:**
  - Comprehensive assessment of the ASTI program
  - Roadmap for the integration of ASTI into FAO
- **2024:**
  - Piloting the new ASTI data collection approach in **9 countries**
  - Review of the pilot outcomes to formulate recommendations in a lessons learned report
  - Institutionalization of ASTI at the national and global level
    - Capacity building regional workshops (RLC, RAF, RAP, RNE)
    - Implementation in countries
- **2025:**
  - Global rollout: regular annual data collection round of Tier 1 variables across all FAO members through formal National Statistical System mechanisms
  - Dedicated in-country capacity building and creation of a community of practice on ASTI

# ASTI program assessment

## Main recommendations

- **Increase country coverage** by conducting survey rounds in all FAO Members, including high-income countries, and incorporating information from other sources
- **Increase the frequency** of data collection to gather more timely and complete information
- **Restructure the data collection approach** integrating ASTI into national statistical system mechanisms
- **Split data collection into Tier I and Tier II variables**, with core data collected annually, and structural variables adapted according to national needs
- **Foster national dialogues, with NARIs and NSOs as main actors**, to establish country-specific models for data collection and enhance country ownership
- **Streamline processes** of validating the list of agencies and maintaining regular updates of NARS composition
- **Improve the collection of data from the private sector** by linking it to compulsory response statistical operations or engaging with national statistical offices.

# Action Plan

## Operational Mechanisms: Actions and Outcomes

### Data Products

- 1.1 Revisit scope
- 1.2 Increase country coverage
- 1.3 Improve private sector data collection
- 1.4 Regular frequency of data
- 1.5 Increased relevance

### Data Management Portal

- 2.1 Migration of the existing DMP
- 2.2 Integration into FAO SWS and SDW

### New Data Collection Approach

- 3.1 Integrate ASTI data collection into NSS mechanisms
- 3.2 Pilots in 9 countries
- 3.3 Capacity building
- 3.4 First data collection round
- 3.5 Global institutionalization

### Network of Regional Partners

- 4.1 Building on the existing network of regional partners
- 4.2 Explore opportunities for new collaborations



# THANK YOU!







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## Session 2: New approach to ASTI data collection and institutionalization

Regional Workshop for Asia-Pacific  
Bangkok, Thailand, 15-17 January 2025



# New approach to ASTI data collection and institutionalization

1. ASTI new data collection approach
2. The process of institutionalization, starting from the global level to country level
3. Discussions on the process of institutionalization



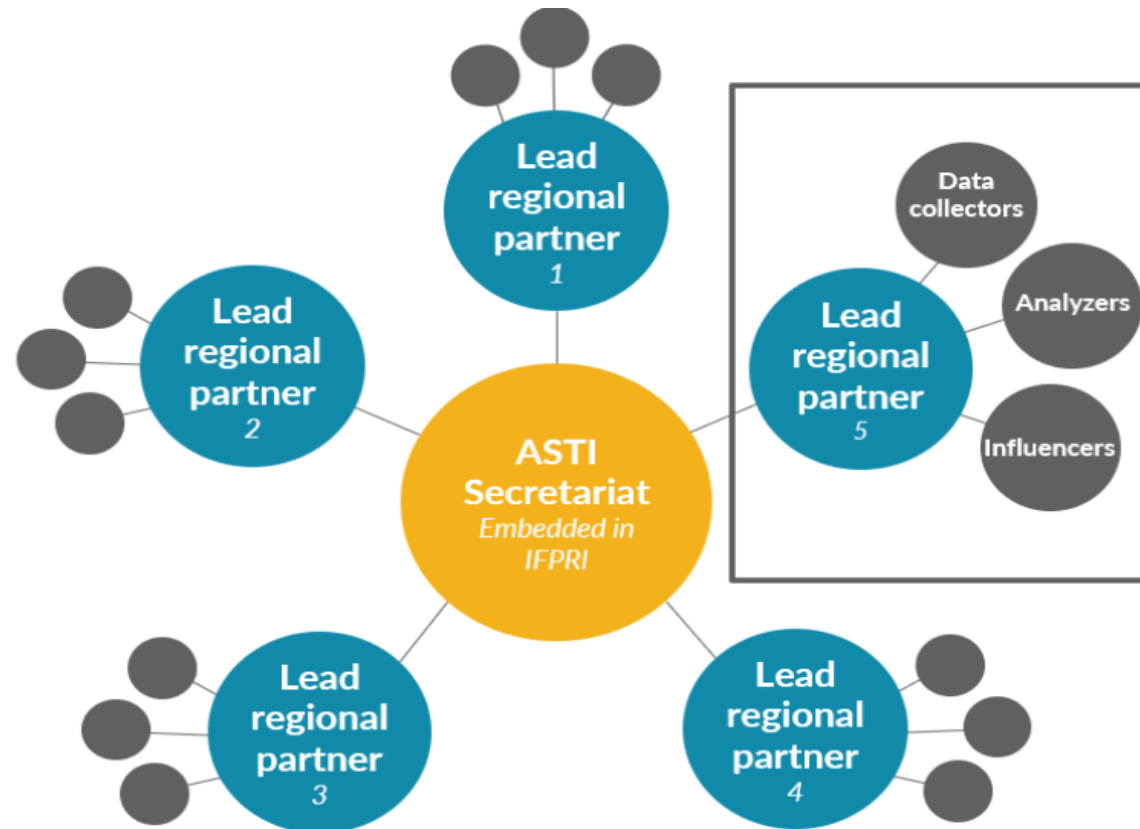
# Action Plan

## Operational Mechanisms: Actions, Tasks and Outcomes

Data Products	Data Management Portal	New Data Collection Approach	Network of Regional Partners
<ul style="list-style-type: none"><li>• 1.1 Revisit scope</li><li>• 1.2 Increase country coverage</li><li>• 1.3 Improve private sector data collection</li><li>• 1.4 Regular frequency of data</li><li>• 1.5 Increased relevance</li></ul>	<ul style="list-style-type: none"><li>• 2.1 Migration of the existing DMP</li><li>• 2.2 Integration into FAO SWS and SDW</li></ul>	<ul style="list-style-type: none"><li>• 3.1 Integrate ASTI data collection into NSS mechanisms</li><li>• 3.2 Pilots in 9 countries</li><li>• 3.3 Capacity building</li><li>• 3.4 First data collection round</li><li>• 3.5 Global institutionalization</li></ul>	<ul style="list-style-type: none"><li>• 4.1 Building on the existing network of regional partners</li><li>• 4.2 Explore opportunities for new collaborations</li></ul>

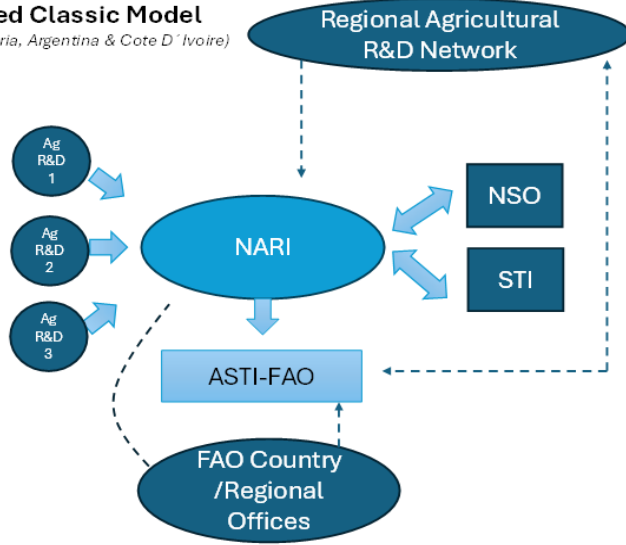


## Previous ASTI data collection approach

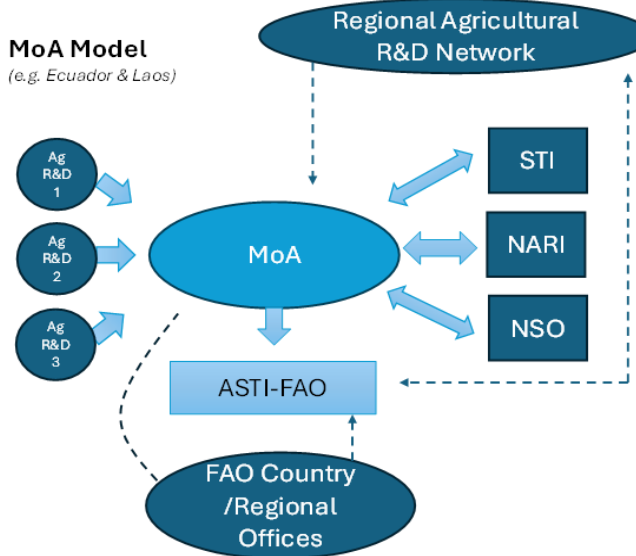


## New ASTI production models

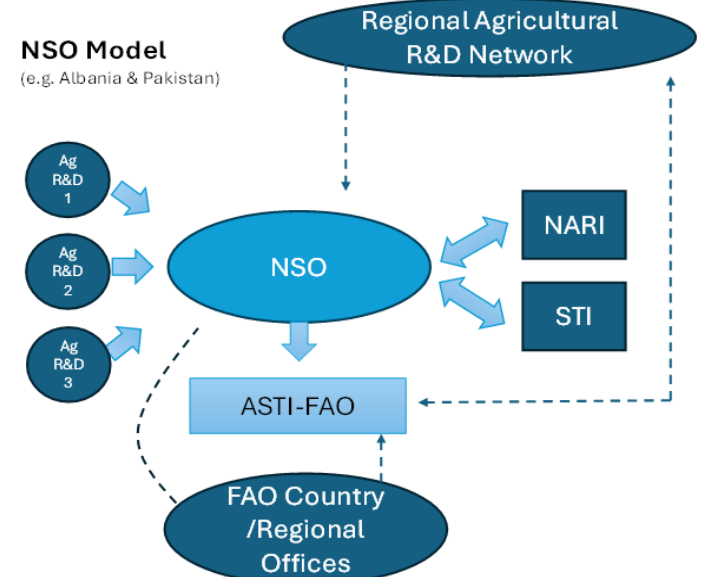
**Revised Classic Model**  
(e.g. Nigeria, Argentina & Cote D'Ivoire)



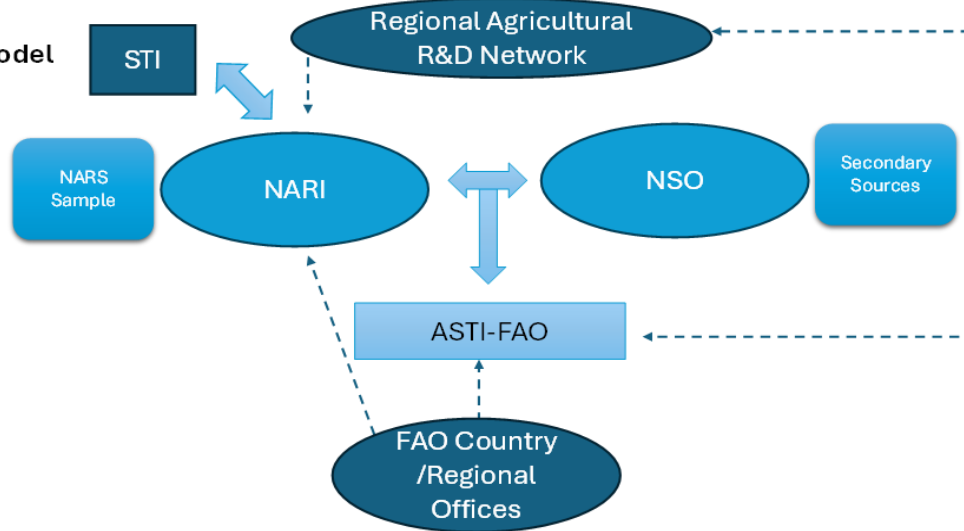
**MoA Model**  
(e.g. Ecuador & Laos)



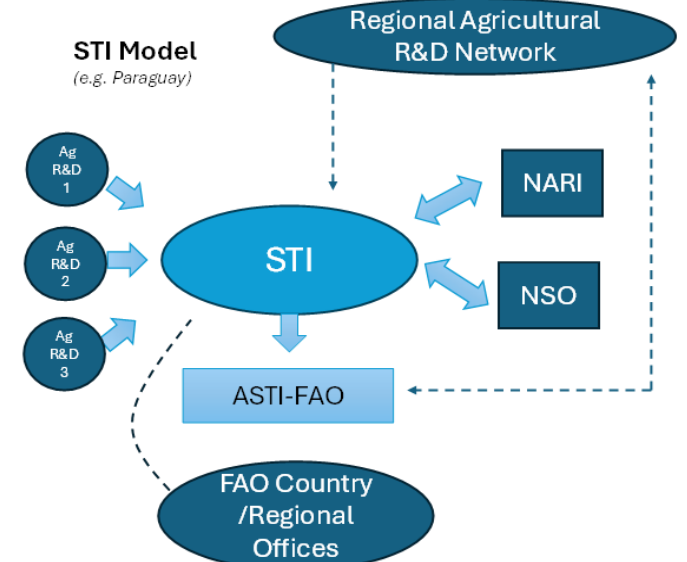
**NSO Model**  
(e.g. Albania & Pakistan)



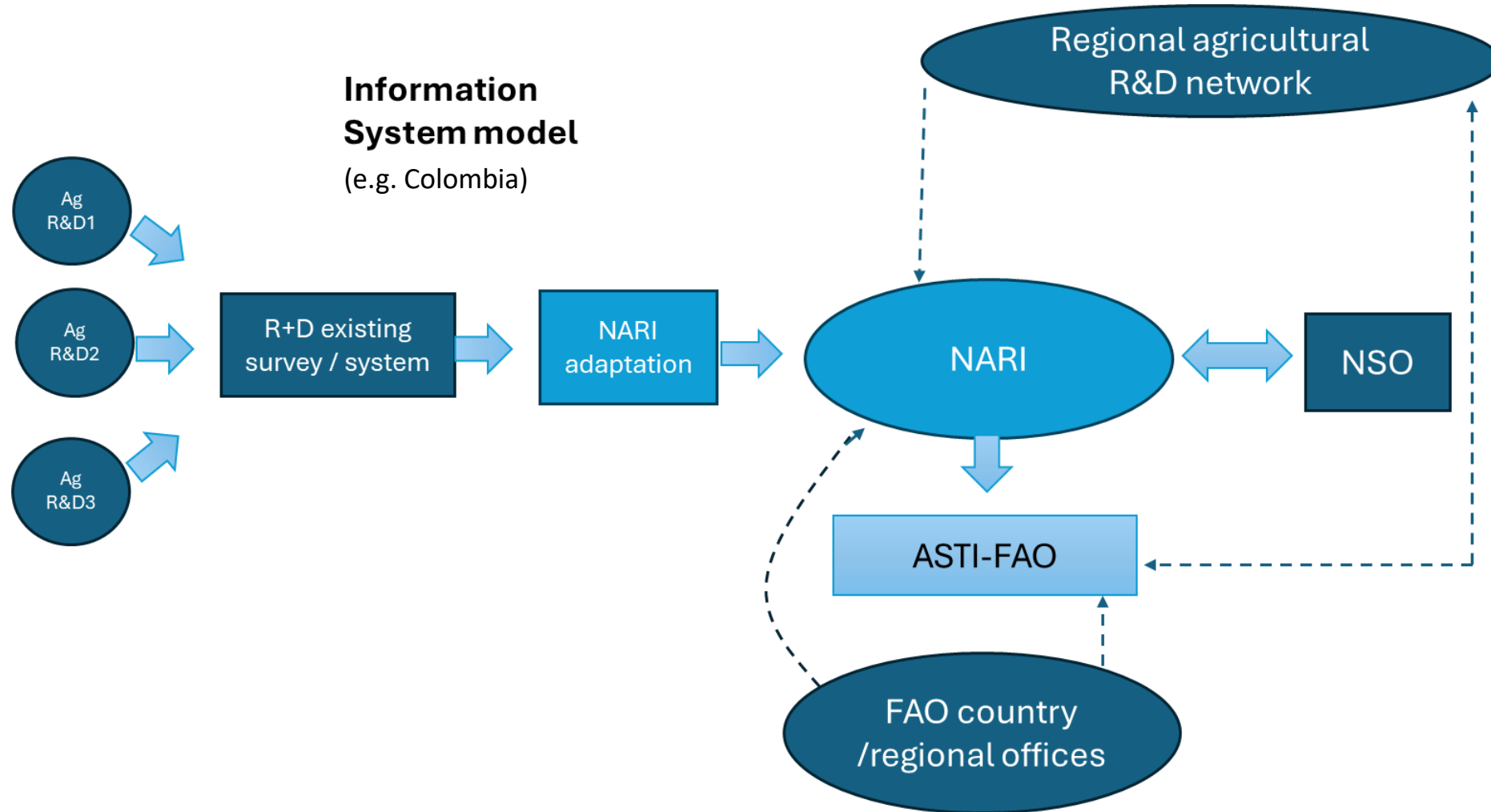
**Hybrid Model**  
(e.g. Malaysia)



**STI Model**  
(e.g. Paraguay)

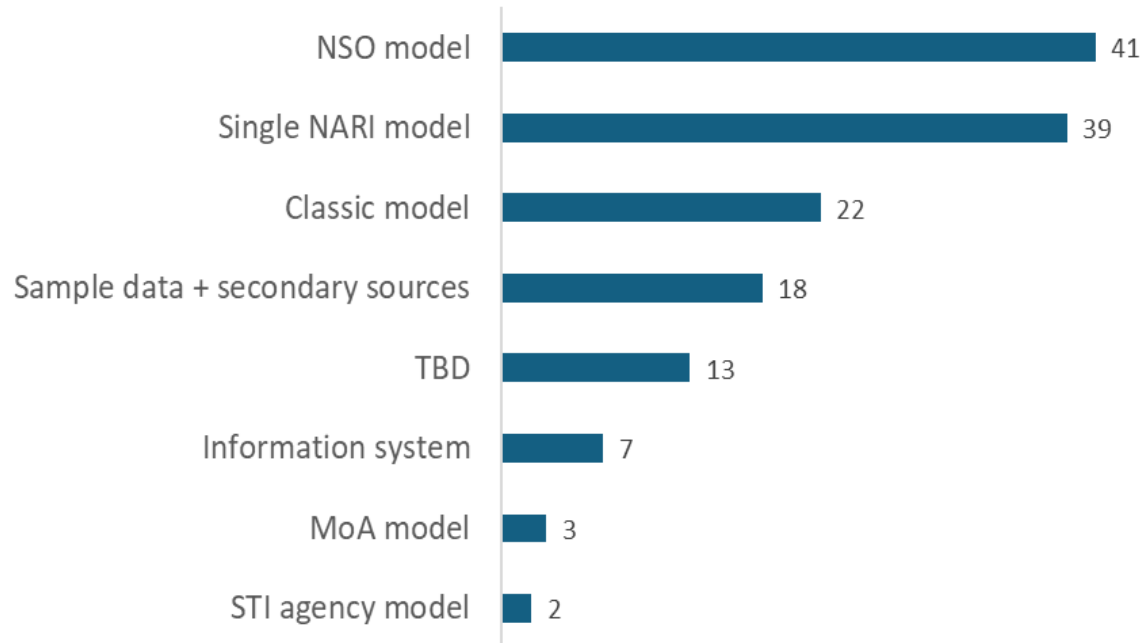


## Preferred model for ASTI institutionalization

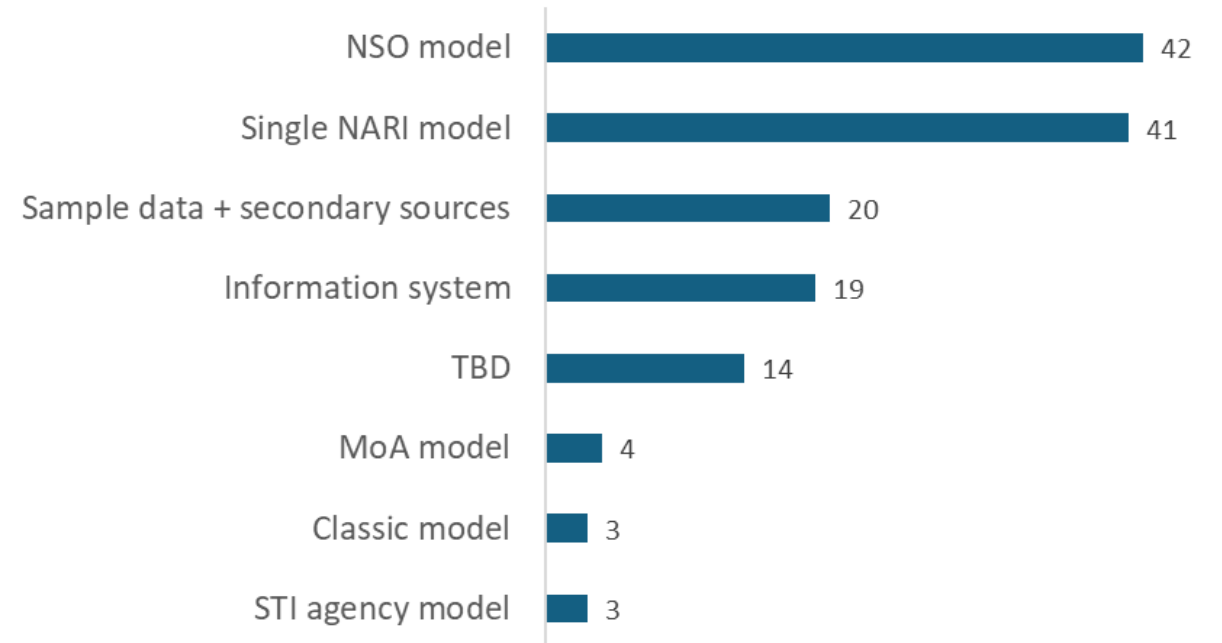


## ASTI new data collection approach by country

Preferred model to update ASTI dataset in 2025



Recommended model for future institutionalization





# Proposed approach to the in-country implementation

## Rationalizing a differentiated data collection frequency

### Tier 1: Core aggregates

Investments and human resource capacity variables will be collected through FAO questionnaires administered on an annual basis (i.e. total spending, total researchers)

**These data will be disseminated through FAOSTAT**

### Tier 2: Detailed and granular variables

A comprehensive questionnaire could be distributed every 3-5 years to collect a more in-depth detailed indicators (e.g. gender, commodity focus, research outputs, qualitative data, etc.)

**Structural data to be collected according to national needs**

# FAOSTAT indicators

Only Tier 1 indicators will be collected in the global roll-out

Tier 1:  
Core  
aggregates

Main indicators:

- 1) Total agriculture research spending in constant prices
- 2) Agriculture research spending as a share of agriculture, forestry and fishing value added
- 3) Total of Full Time Equivalent (FTE) agricultural researchers
- 4) FTE agricultural researchers per 100,000 farmers

**These data will be  
disseminated through  
FAOSTAT**

## Institutionalization of ASTI

### At global level:

- Institutionalization through UN system mechanisms
- Integration within FAO statutory bodies and FAOSTAT

### At national level:

- Regular data collection through official mechanisms
- Building capacities and promote country uptake

# Institutionalization of ASTI

## Use cases and pathways for impact

- Global dashboards (e.g. OECD, UNESCO, World Bank, Global Food & Nutrition Security Dashboard), contributions to global commitments and strategies by Member States (e.g. CAADP targets), and inclusion in the ATIO are key use cases
- Engaging with regional and national key stakeholders to raise awareness of the uses of ASTI data and underpin country ownership of the data production process
- Regular data collection through official mechanisms will increase ASTI data relevance for policy use

## UN system and FAO

- The UN Committee of Experts on Agricultural Statistics (UN-CEAG) included a new workstream in the 2023-25 working program to review ASTI methodology and prepare guidelines to be endorsed by the UN Statistical Commission
- The transition of ASTI to FAO will entail an institutionalization strategy through FAO's statutory (i.e. Regional Commissions of Agricultural Statistics) and governing bodies for the inclusion of ASTI in the ESS regular program



Building use cases

KEY STAKEHOLDERS
POTENTIAL ASTI USE CASES
ASTI data used for modeling long-term impacts of R&D investment
ASTI data used for prioritizing and mobilizing resources
ASTI data used to identify gaps, and set future investment priorities, including funding opportunities to seed innovation
ASTI data used to set regional and global investment targets in Ag R&D
ASTI data used to identify entry points for strengthening NARS and local research capacities
ASTI data used for better coordinating agricultural R&D nationally and across regions

National Governments	National research & innovation systems	Donor agencies/ Multilateral agencies	Regional/ Subregional organizations	Scientific/ Academia	International NGOs	Private businesses
✓	✓		✓	✓	✓	
✓	✓	✓				
✓	✓	✓	✓		✓	
✓		✓	✓			
✓	✓	✓	✓	✓	✓	
✓	✓	✓	✓	✓	✓	✓

## UN-CEAG workstream on ASTI

The UN Committee of Experts on food security, agricultural and rural statistics (UN-CEAG) was created under the umbrella of the **UN Statistical Commission** in 2024 and is formed by experts from national statistical offices, ministries of agriculture and international organizations.

In late February 2024, the Committee decided to create a workstream on Agricultural Science and Technology Indicators, with the aim of producing guidelines for data collection, and review and harmonize methodologies

### **The primary goals of this workstream are:**

- To discuss strategies to enhance the long-term institutionalization and to maximize national production and uptake of Ag R&D data
- To collectively formulate guidelines and methodology for ASTI data collection

### **The expected products are:**

- 1) Guidelines for in-country data collection and institutionalization processes
- 2) Harmonized methodology for the collection of agricultural R&D data in LMICs and high-income countries

# Institutionalization of ASTI

## Regional Level

**AFRICAN COMMISSION ON AGRICULTURAL STATISTICS - 28th Session / 4-8 Dec 23**

**ASIAN PACIFIC COMMISSION ON AGRICULTURAL STATISTICS – 30th Session / 19-24 May 24**

**Decisions adopted by member countries refer to:**

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- *Recognize the importance of data on science, technology and innovation for guiding policies that aim to enhance agricultural productivity and, therefore, poverty reduction and hunger eradication. However, it also recognizes the scarcity of these data and the need to improve its collection and to systematize the dissemination of quality, official and country owned indicators.*
  - *Acknowledge the ongoing transition towards a more institutionalized and sustainable Agricultural Science and Technology Indicators (ASTI) program in FAO and takes note that FAO will be seeking opportunities to pilot new data collection approaches in selected countries in the region.*
  - *Commend member countries to support ASTI activities in the region and encourages FAO to conduct specialized capacity building activities with the national institutions that produce agricultural statistics.*
  - *Recommend the integration of the National Agricultural Research Institutes (NARIs) into the National Statistical Systems.*
  - *Encourage member countries to initiate national dialogues to establish fit-for-purpose data collection models for ASTI data.*
-

# Institutionalization of ASTI

## National level

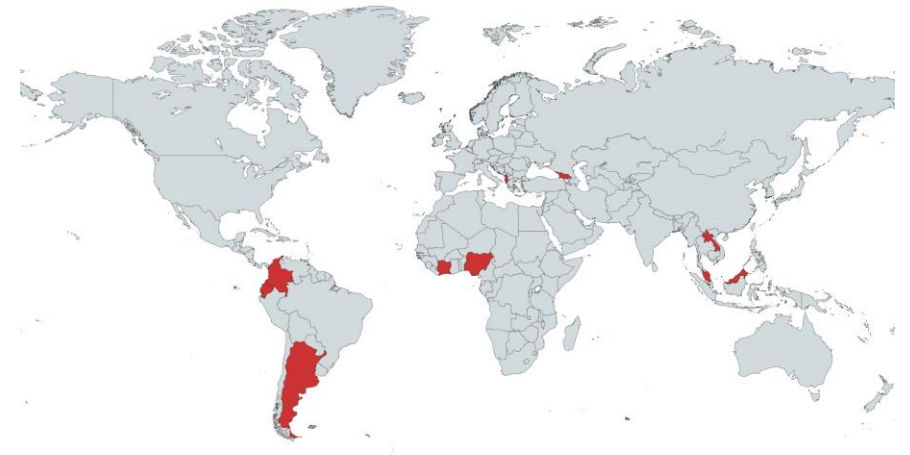
- The NSS is led by the National Statistical Office (NSO). Different national agencies which form part of the NSS are mandated and responsible for collection of data
- The formalization of reporting of ASTI data facilitates the inclusion of ASTI datasets in FAOSTAT, as FAO prioritizes the use of official data
- The next phase in this process is to engage with the partners of the NSS to consider the inclusion of the National Agricultural Research Institutions so that they can facilitate the collection of data from the NARS institutions
- **The new data collection approach aims to integrate ASTI into NSS mechanisms for:**
  - ✓ National validation of the data
  - ✓ Enhance country ownership
  - ✓ Clear data collection mandate
- The involvement of the NSO may also facilitate the collection of data from private sector organizations

## Country pilots on the new data collection approach

To test the new data collection mechanisms and redesigned questionnaires, FAO is conducting pilots in countries with different historical engagement in ASTI, size of NARS, institutional set-up and region

### Objectives and expected outcomes:

1. Implement strategies that positively **impact response rate and time** to data
2. **Institutional arrangements** to validate data and institutionalize ASTI at the national level
3. Satisfactory **testing of the questionnaires** by the respondents
4. Integrate ASTI as an **official operation** into the country's statistical system (NSDS, Statplan, yearbook, NSS inventory, etc)
5. Testing of the Data Management Portal (DMP), if applicable
6. National **publication** of ASTI survey results and inclusion in the statistical release calendar
7. Explore **data series** matching and updating strategies





# THANK YOU!







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## Session 4: Country experiences

Lessons learned and recommendations

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## Questionnaire evaluation form

### Evaluation form ASTI 2024 - Albania

Thank you for your participation in the evaluation of the ASTI 2024 questionnaire. This brief survey will help FAO and its national partners to analyze the questionnaire used for ASTI 2024 data collection, with the purpose of improving future editions.

*This brief evaluation survey should be completed by the same person who completed the ASTI 2024 questionnaire within your organization.*

#### ▼ Contact information

##### a. What is your name?

*Please indicate your full name*

##### b. What is your email address?

##### \* c. What is the name of the agency/organization for which you conducted the ASTI 2024 questionnaire?

##### d. Type of agency / institution

*Choose the option that best suits the characteristics of the organization.*

- Government
- Education
- Private
- Non-profit organization
- Other

##### e. What is your position in this organization/agency?

*Please indicate your position at the agency for which you completed the ASTI 2024 questionnaire.*

#### ▼ Evaluation form of the ASTI 2024 questionnaire

##### 1. The questionnaire was first sent to the correct person

- Yes
- No
- Do not know

##### 2. The objectives of the survey were correctly explained in the introduction of the questionnaire

*Specify your level of agreement with the statement*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
- Do not know / Not applicable

##### 3. The questionnaire had a logical structure and contained clear instructions to be answered

*Specify your level of agreement with the statement*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
- Do not know / Not applicable

##### 4. All definitions were clearly provided

*Specify your level of agreement with the statement*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly agree
- Do not know / nos applicable

##### 5. The questions were clear and easy to understand

*Specify your level of agreement with the statement*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
- Do not know / Not applicable

##### 6. All questions and answer options were relevant

*Specify your level of agreement with the statement*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
- Do not know / Not applicable

##### 7. In your opinion, are there any important questions missing from the questionnaire?

*Specify your level of agreement with the statement*

- Yes
- No
- Do not know

##### 8. The time and effort required to complete the questionnaire was reasonable

*Specify your level of agreement with the statement*

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
- Do not know / Not applicable

##### 9. Specify the approximate amount of time it took to collect the necessary information and complete the questionnaire?

*Use hours. For example, for 2 hours write "2"*

##### 10. How many people in your organization contributed to completing ASTI questionnaire?

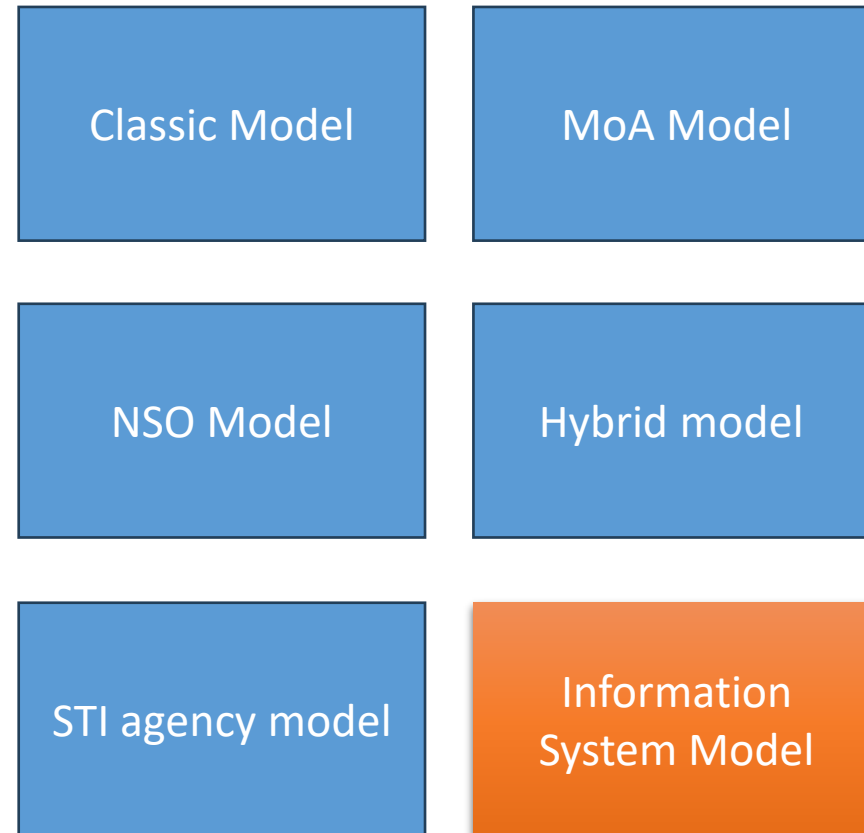
*Include all the people who collaborated in gathering the information and completing the questionnaire. Write the number only. E.g. if three people participated write "3".*

## Pilot countries NARS characteristics and testing set-up

<b>Argentina</b>	Middle-large size NARS with no ASTI data since 2013, but an annual R&D survey. <u>Test</u> : Integration to the NSS and filling the data gap using existing data.
<b>Colombia</b>	Middle-large size NARS with a consolidated information system. <u>Test</u> : Tailoring an existing system to ASTI and leveraging NSS mechanisms, as well as the full questionnaire.
<b>Ecuador</b>	Small size NARS not led by the NARS. Latest data collection was in 2020., <u>Test</u> : Multi-institutional exercise led by the MoA, agency list validation, full questionnaire and private sector leveraging NSS mechanisms.
<b>Nigeria</b>	Large size NARS. Recently collected data for 2022. <u>Test</u> : NSS integration, Tier II questionnaire and institutionalization process
<b>Albania</b>	New small size NARS country with no leading NARI. <u>Test</u> : Statistical full enumeration for agency list building, full questionnaire, EU/OECD NSO-led R&D survey model
<b>Georgia</b>	New middle size NARS country with a leading STI agency. <u>Test</u> : Agency list building using admin data and full questionnaire were tested
<b>Malaysia</b>	Middle size NARS concentrated in less than 3 agencies. <u>Test</u> : Use of a hybrid system for updating Tier 1 ASTIs, including private sector, through existing data sources and a reduced data collection on the main agencies
<b>Côte d'Ivoire</b>	Small size NARS. Recently collected data for 2022. <u>Test</u> : NSS integration, Tier II questionnaire, and single NARI data updating method
<b>Laos PDR</b>	Small size NARS. Latest data collection in 2016. <u>Test</u> : NSS integration, institutionalization process and single NARI data updating method

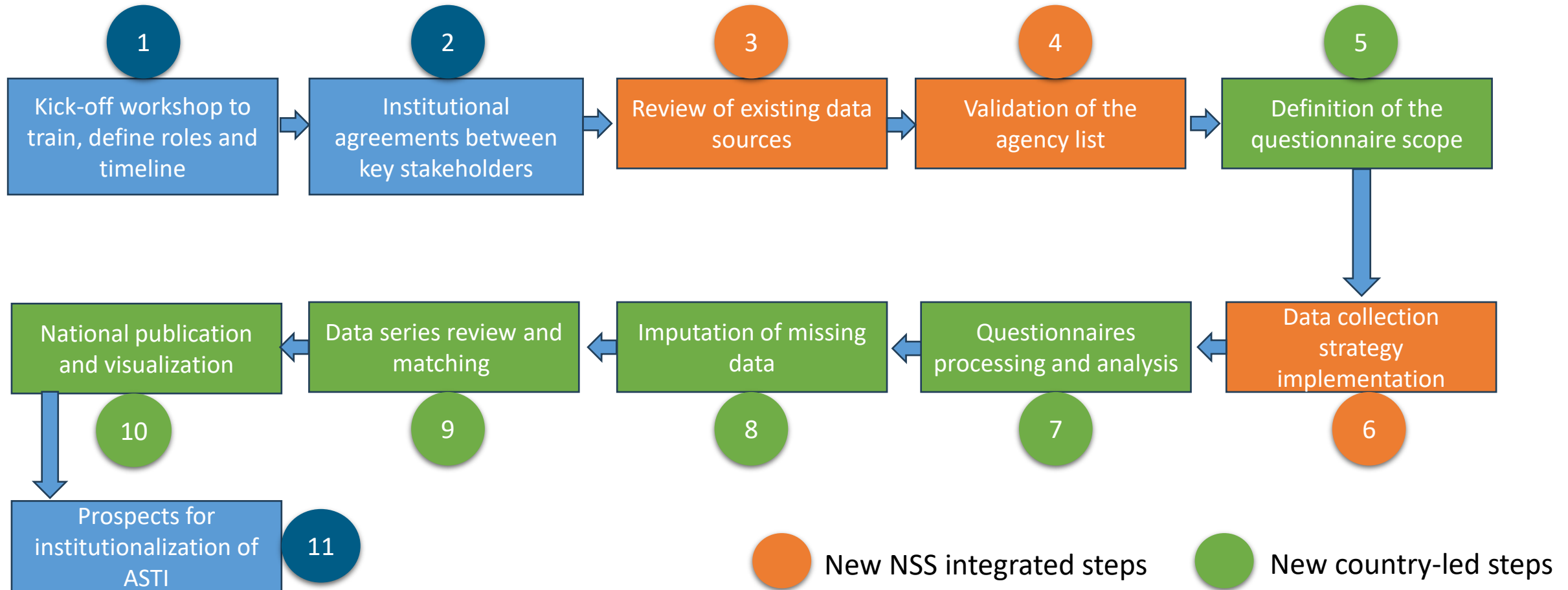


## Data collection models tested on pilot experiences



# In-country testing components

## New NSS integrated and country-led steps



# Preliminary findings and recommendations

## Institutional arrangements

- Multi-agency engagement (i.e. NARI, NSO, MoA and STI agency) is key for planning, agency list validation, approaching respondents and data sharing
- Identifying the best suited institutional model is critical for sustainability. NARIs remain the main focal point, except when they have no mandate over the NARS
- Integration of NARI into the NSS is effective. Engagement with NSO has been more productive through NSS coordination areas.
- STI agencies are key where they exist and have a data collection mandate

## Data collection

- Speed of data collection and completeness improve with more frequent and mandatory data provision
- Admin data and existing surveys improved data collection, quality check and agency list validation, but data sharing mechanisms are needed
- Statistical standards and tools enhance the data collection process (e.g. NSS letter, follow-up protocols, confidentiality, official calendar)

## Data series gaps and imputations

- Data series inconsistencies were mainly due to not strictly observing R&D, FTE researcher & agricultural focus definitions and incomplete listing of agencies
- Reconstruction of trends is possible using appropriate secondary sources and proxies

## Dissemination and communications

- More frequent and country-owned data increase user demand (e.g. Colombia)
- Regular publication underpins streamlined national systems. More continuous but aggregated ASTI data are preferable to granular but intermittent
- ASTI use cases need to be developed and promoted (e.g. TFP estimation, grant designing and investment targets)
- High-level awareness raising at regional and national levels is key to institutionalization and resource mobilization in the countries

# THANK YOU!







Food and Agriculture Organization  
of the United Nations

## Session 7: Identify fit-for-purpose model for countries. Cluster Exercise

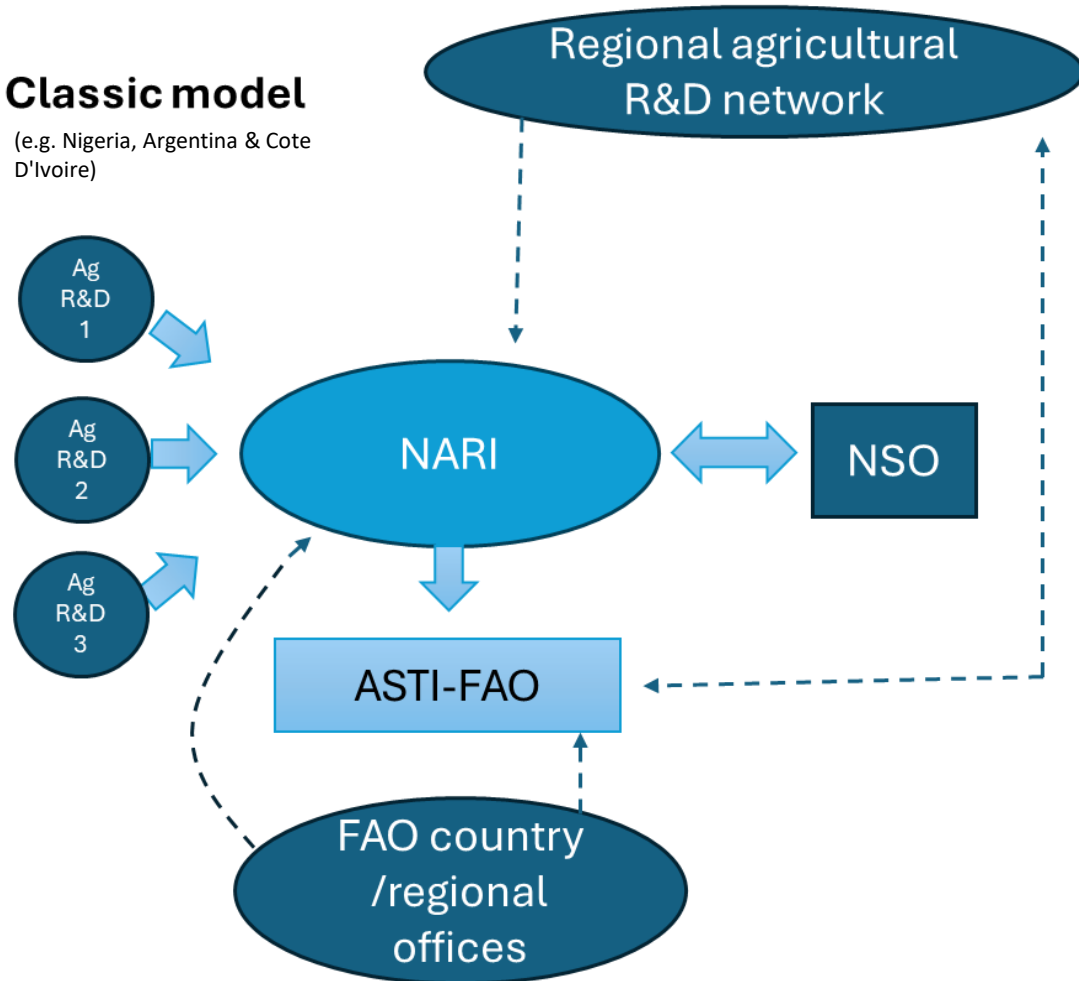
Regional Workshop for Asia-Pacific  
Bangkok, Thailand, 15-17 January 2025



## New ASTI data collection models

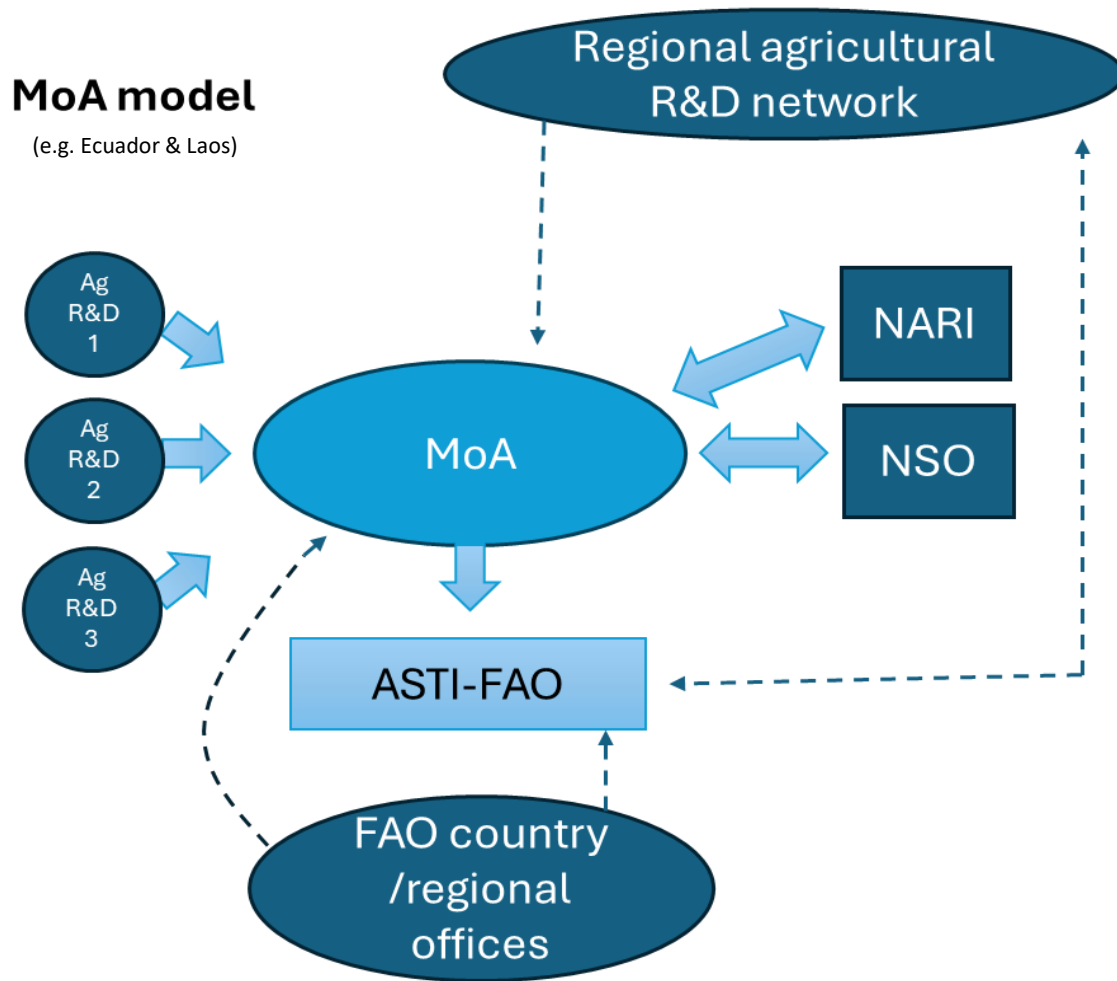
### Classic model

(e.g. Nigeria, Argentina & Cote D'Ivoire)

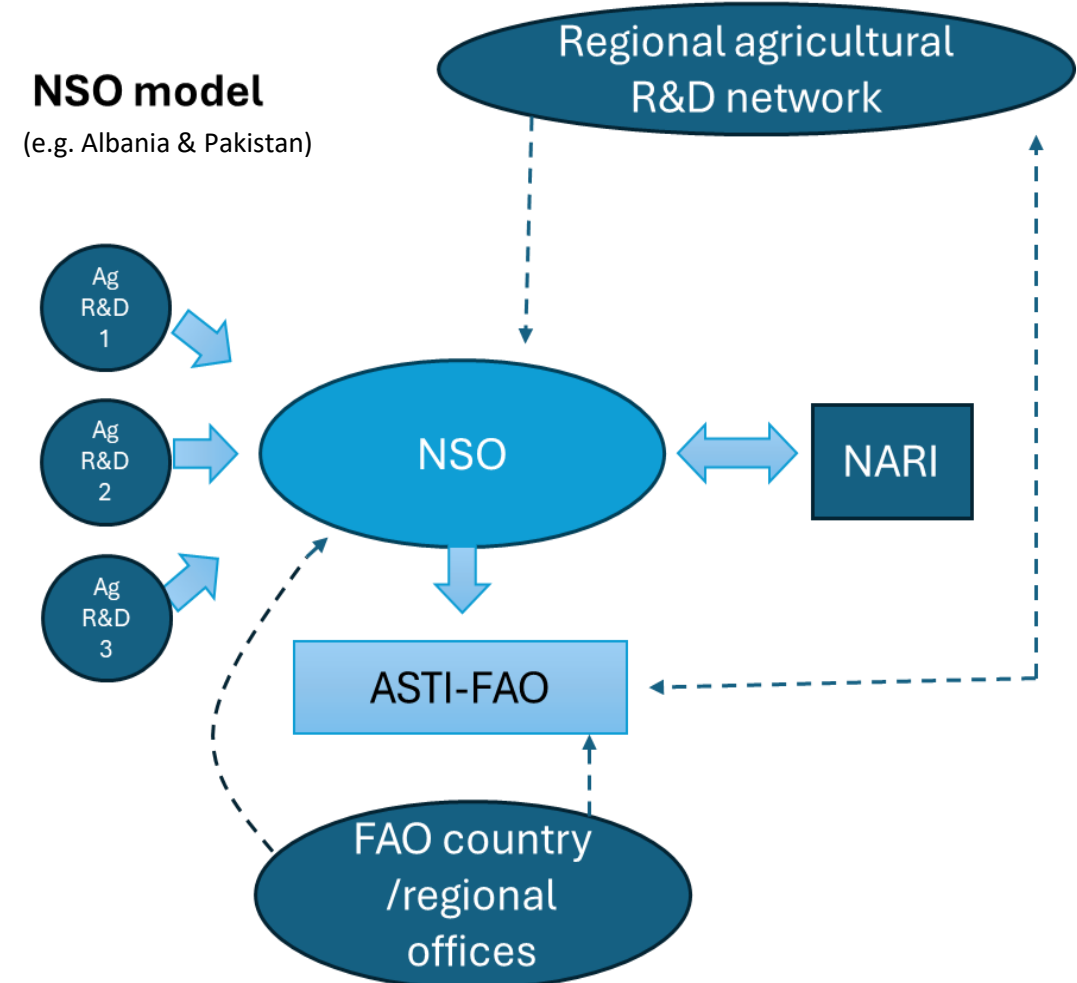
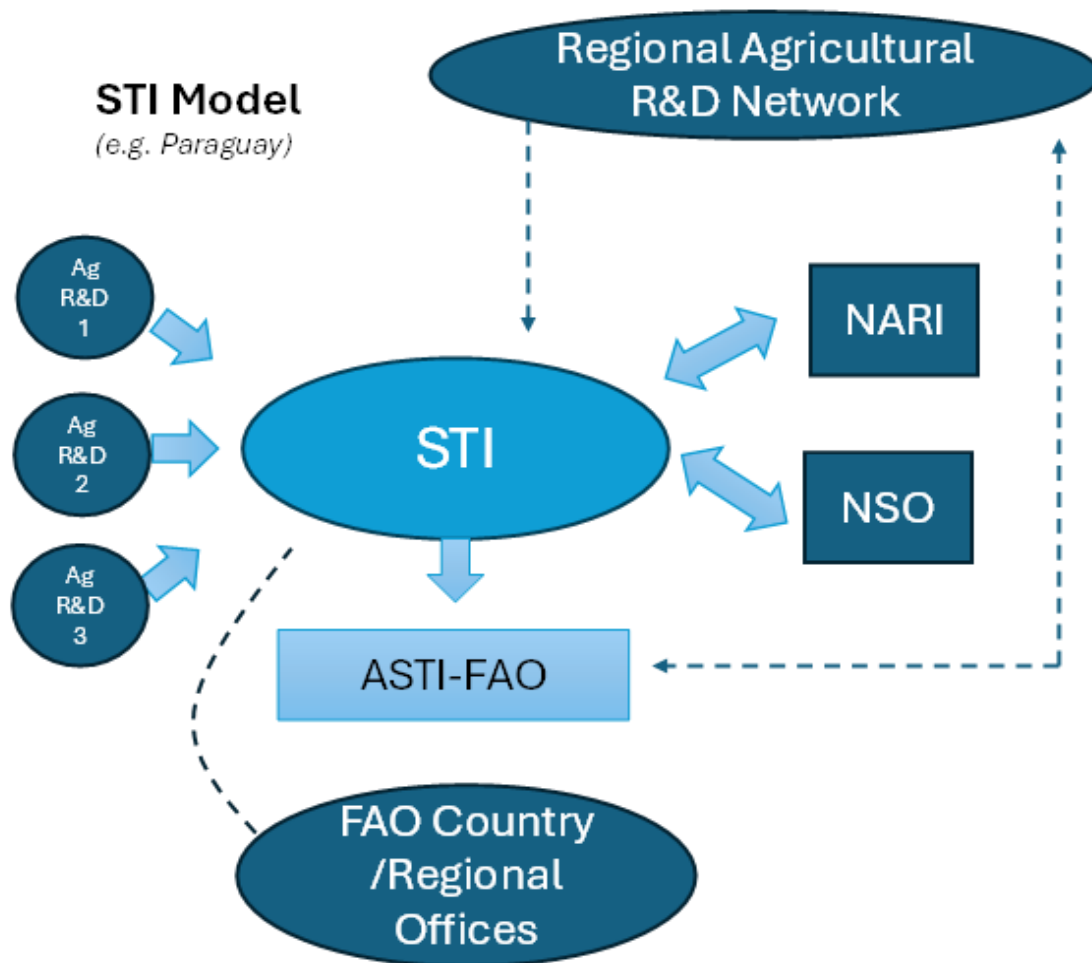


### MoA model

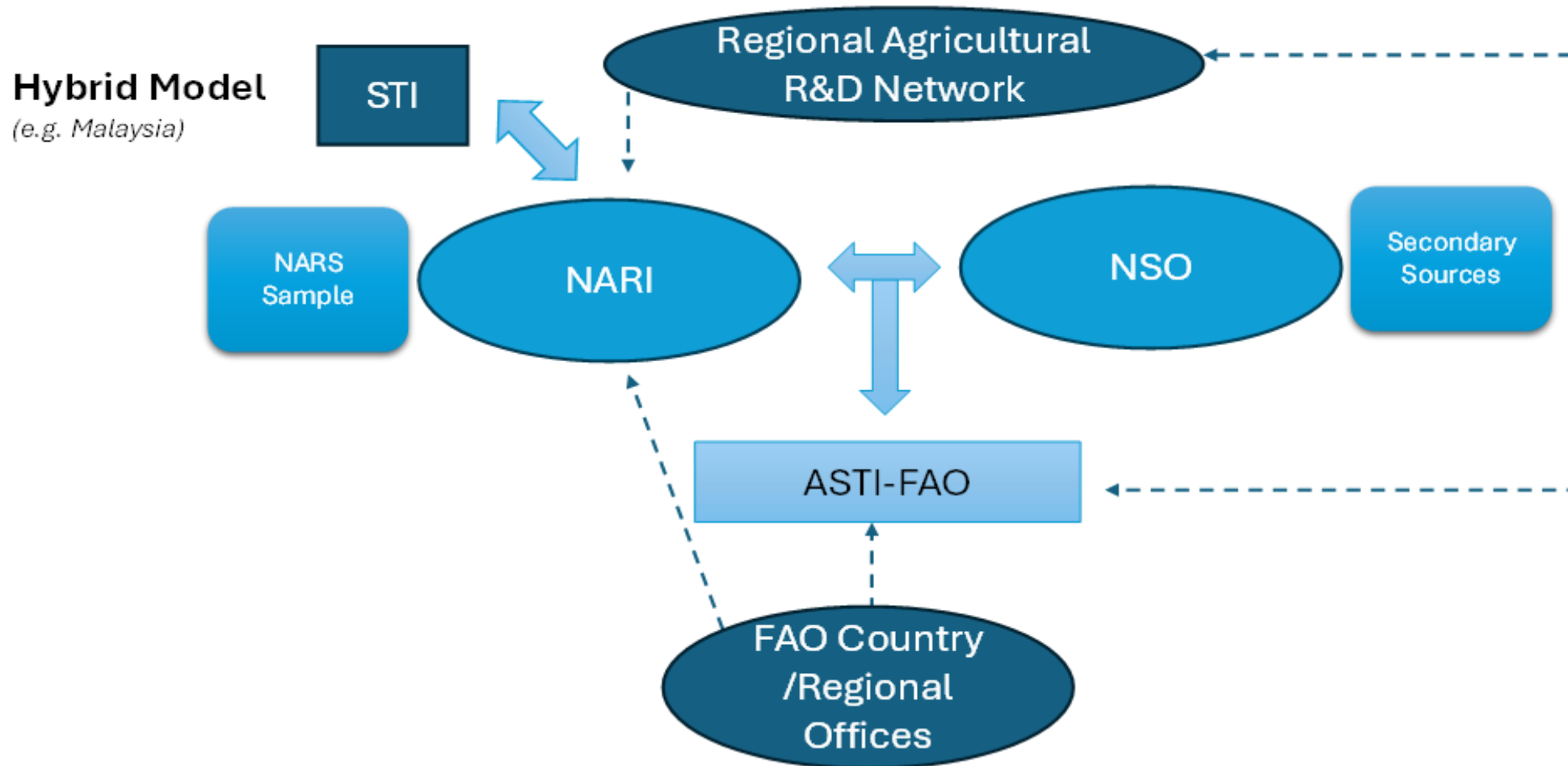
(e.g. Ecuador & Laos)



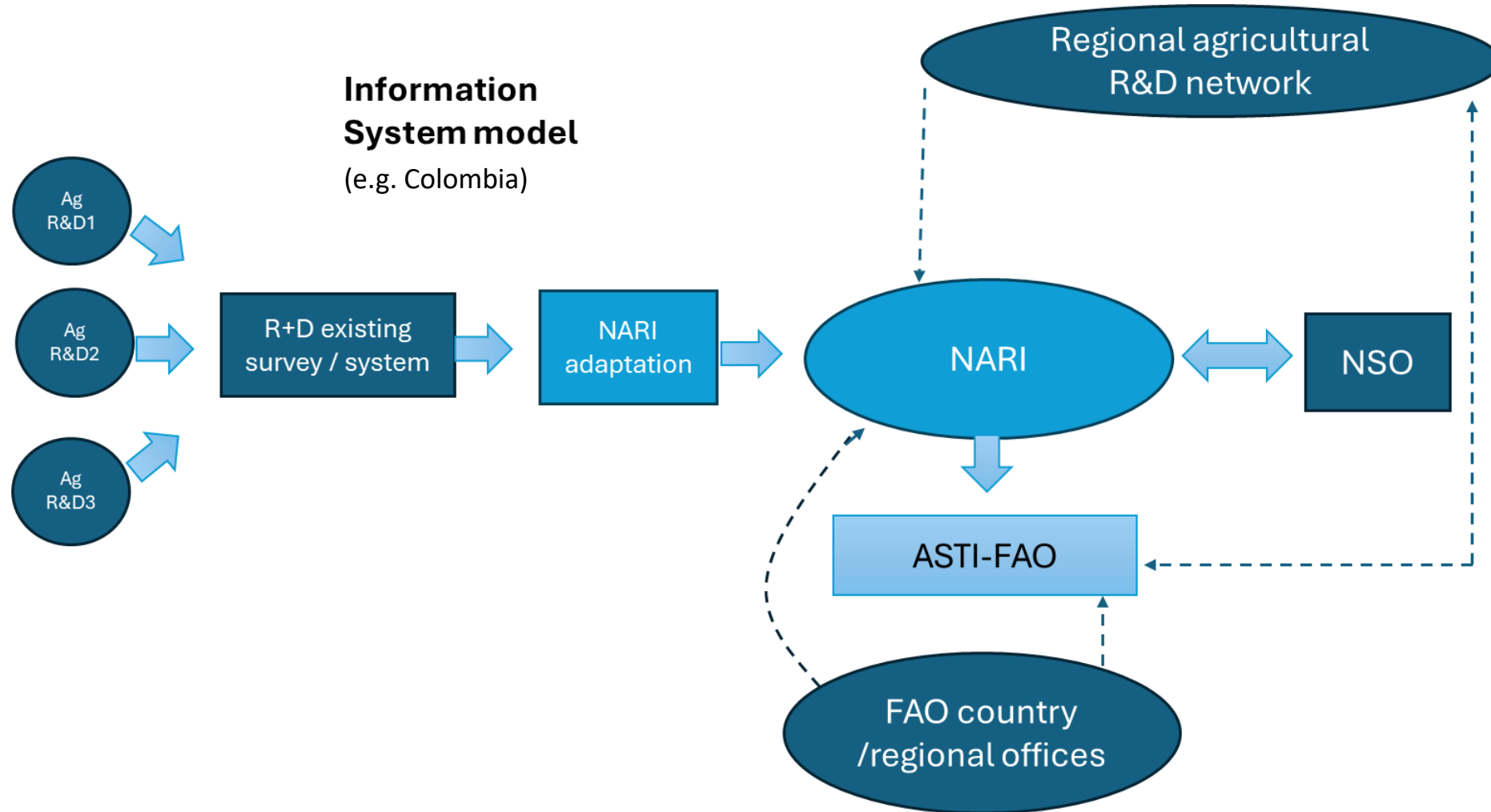
## New ASTI data collection models (cont.)



## New ASTI data collection models (cont.)



## New ASTI data collection models (cont.)



## Main characteristics of an Information System

### LOCAL OWNERSHIP

The process of national institutionalization allows for local ownership of the indicators: collecting agricultural R&D data to meet the demands of national agents.

### REGULAR PUBLICATION

Regular publication makes it possible to have up-to-date data series.

### INTEGRATION INTO THE NSS

Integration into the National Statistical System to increase the rate and speed of responses through a mandatory survey. At the same time, it allows the generation of a quality guarantee.

### INTER-AGENCY AGREEMENT

Inter-agency agreements, so that many demands can be satisfied with a single operative.

### DATA COLLECTION, VISUALIZATION AND PUBLICATION

Data collection, analysis, visualization and publication tools designed to maximize the visibility, usability and quality of the data.

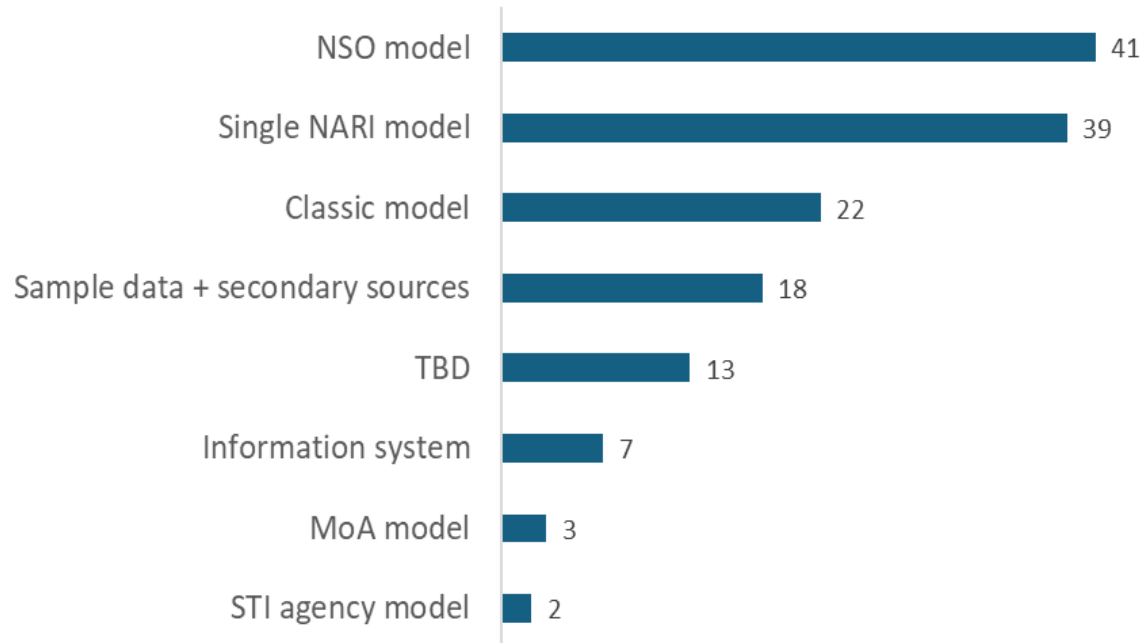
### OWN BUDGET AND WORK TEAM

Budget and a work team specially dedicated to this purpose.

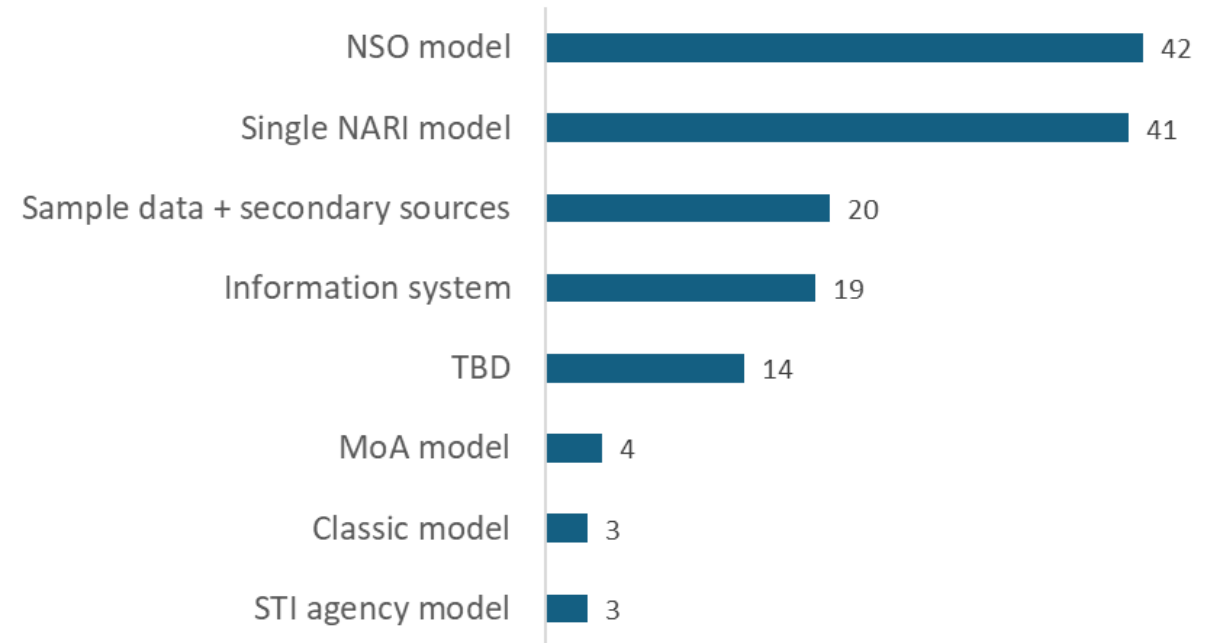


## ASTI new data collection approach by country

Preferred model to update ASTI dataset in 2025



Recommended model for future institutionalization



# Principles to identify the national lead institutions

## Resources-staff & finance

- Which institution has the best resources to operationalize the project?

## Mandate

- Who has the best mandate to implement?

## Proximity

- Who is closest to the source of data?

## Engagement

- Who is best placed to interpret, use and advocate for ASTI amongst the actors?

## Advocacy

- Who is best suited to advocate to policy makers on ASTI?

# Clustering variables

## 1. Historical engagement in the ASTI program (latest data collection)

- a) Less than 5 years (28 countries)
- b) Between 5 and 10 years (31 countries)
- c) More than 10 years (25 countries)
- d) No available data (62 countries)

## 2. Income group (World Bank, 2022)

- a) High income (50 countries)
- b) Upper middle income (36 countries)
- c) Lower middle income (39 countries)
- d) Low income (21 countries)

## 3. Size of the NARS (Large, Medium, Small, NARI)\*

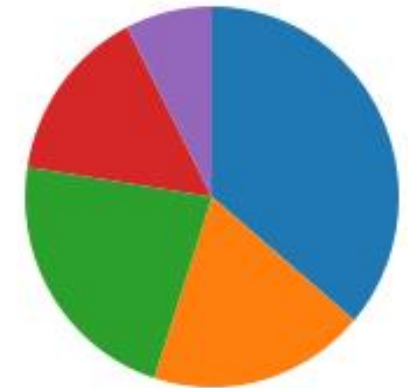
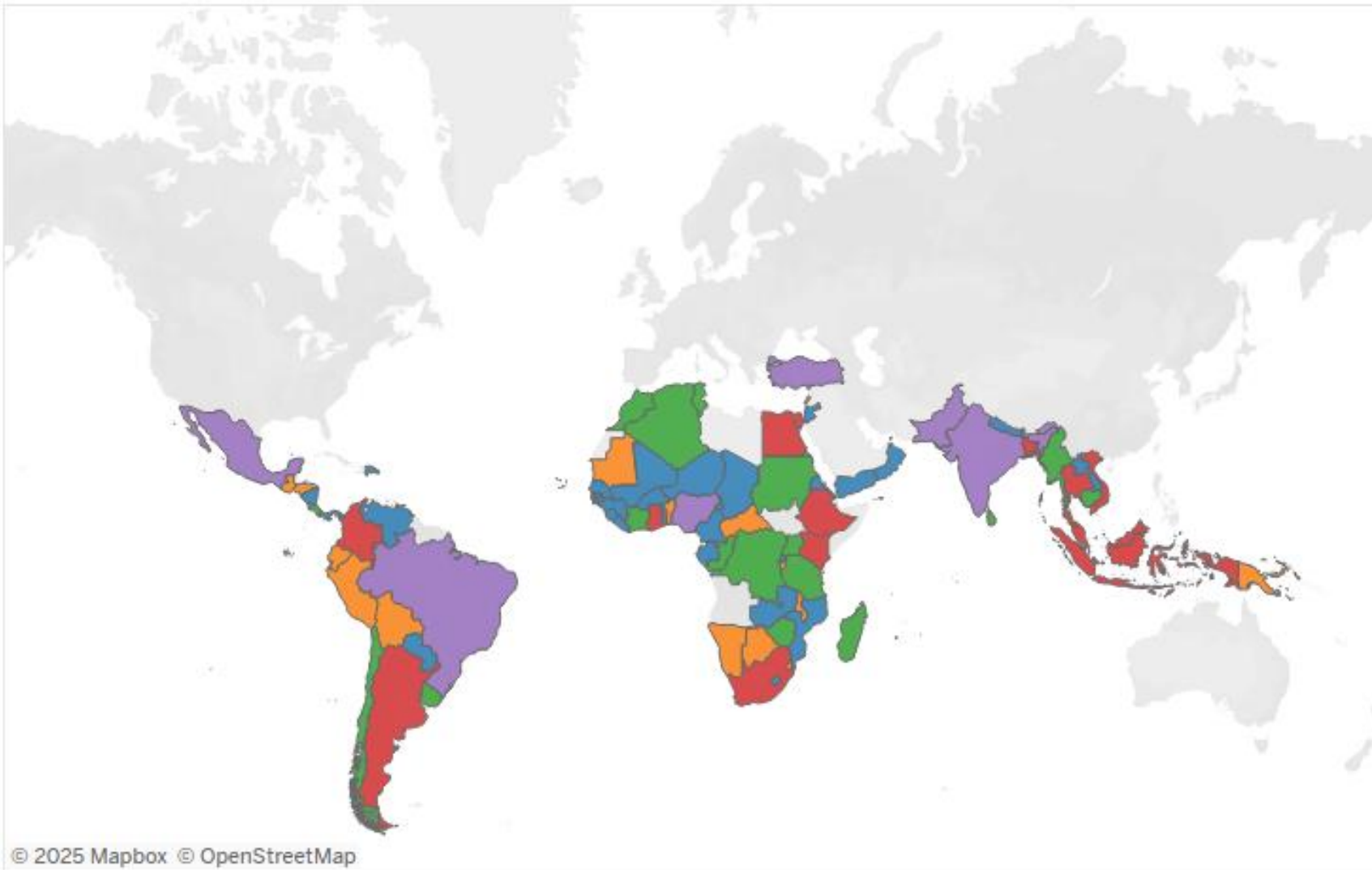
- a) Large: more than 100 agencies (6 countries)
- b) Medium-Large: 40-100 (12 countries)
- c) Medium: 15-40 agencies (18 countries)
- d) Small: less than 15 agencies or 2/3 of the researchers in 3 or less agencies (14 countries)
- e) NARI: 2/3 of the researchers in the NARI (28 countries)

## 4. Agricultural, statistical and R&D institutional architecture

- a) Classic model: NARI leads the NARS or has the mandate to collect data
- b) STI/MoA/NSO model: NARI has no mandate but there is other agency leading the NARS/collecting data
- c) Information System: Existing information system that could report ASTI data

\*Unknown for 68 countries

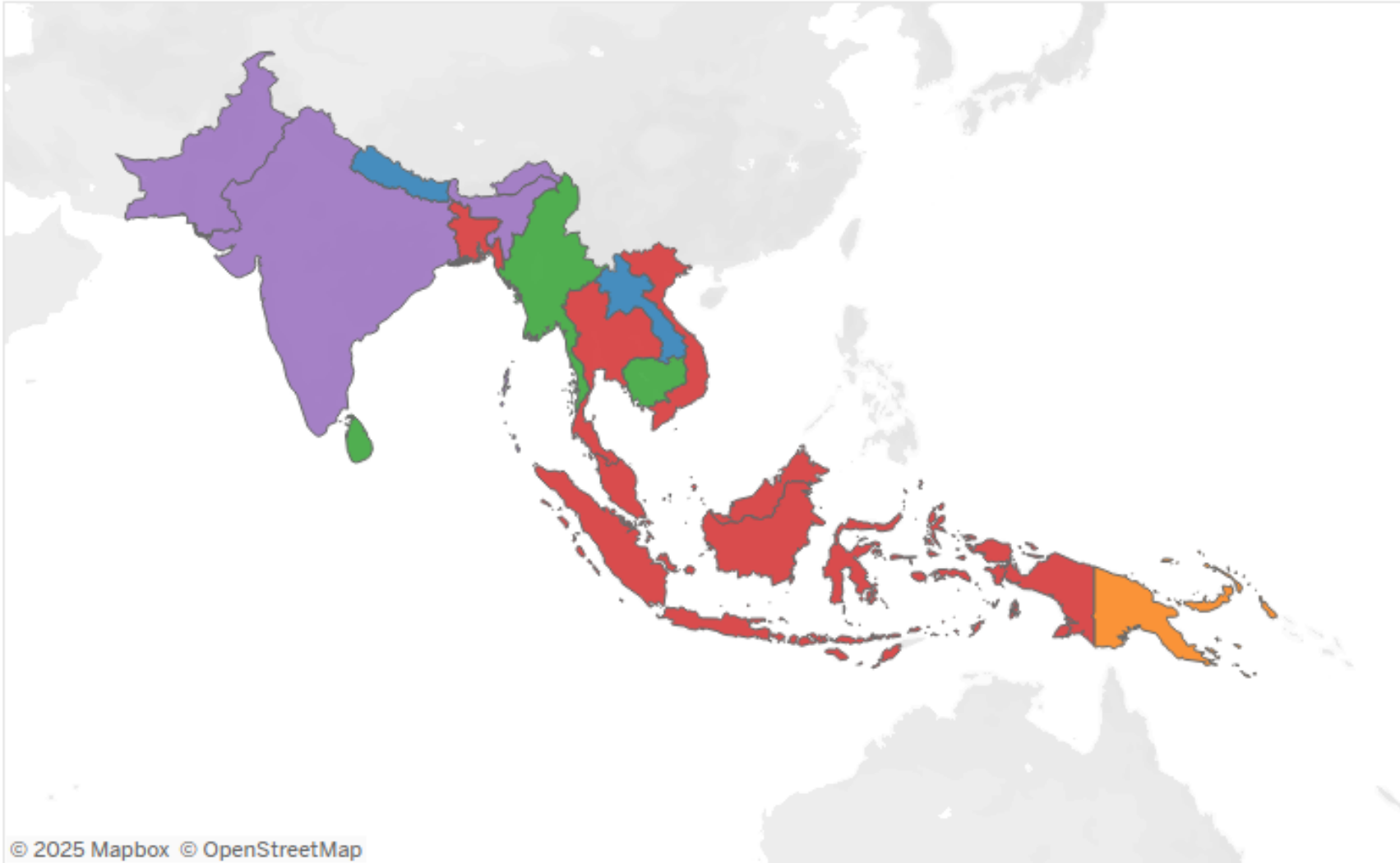
## ASTI Countries by National Agricultural Research System size



- NARI focused
- Small
- Medium
- Medium-Large
- Large

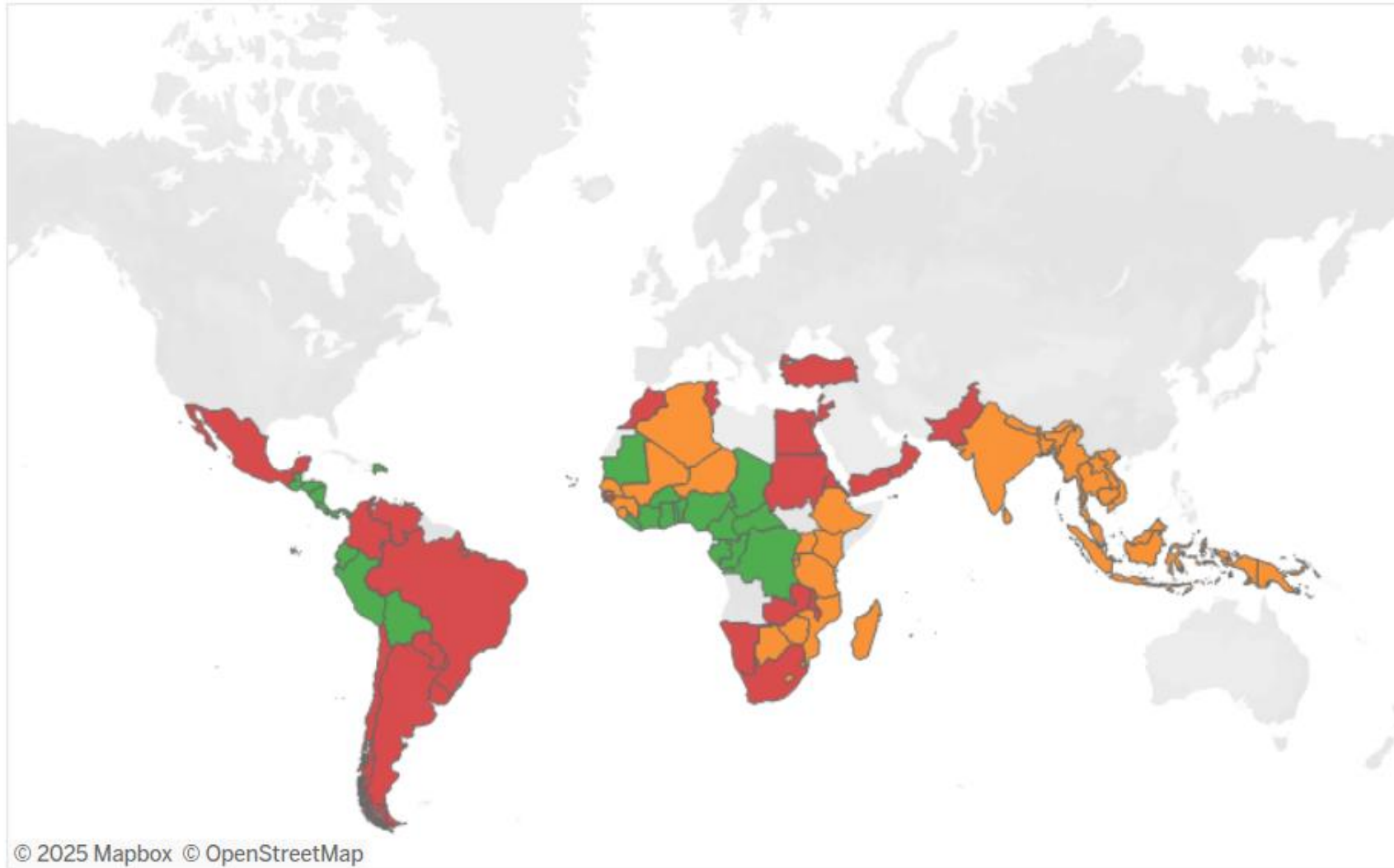


## ASTI Countries by National Agricultural Research System size



- NARI focused
- Small
- Medium
- Medium-Large
- Large

## Countries by ASTI reference year



- Before 2015
- 2015-2019
- 2020 and after

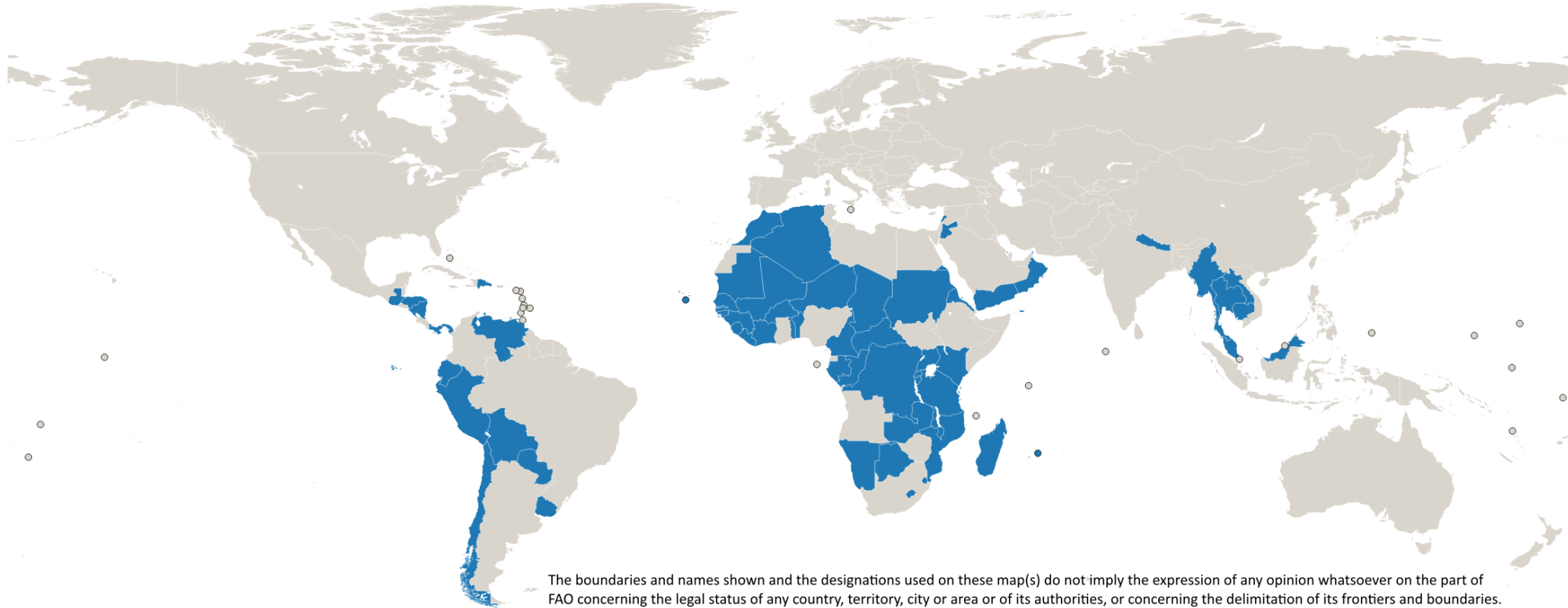
## Countries by ASTI reference year



■ Before 2015  
■ 2015-2019

## Centralized NARS

In 61 countries (6 in Asia-Pacific) ~2/3 of the researchers are in no more than three R&D agencies

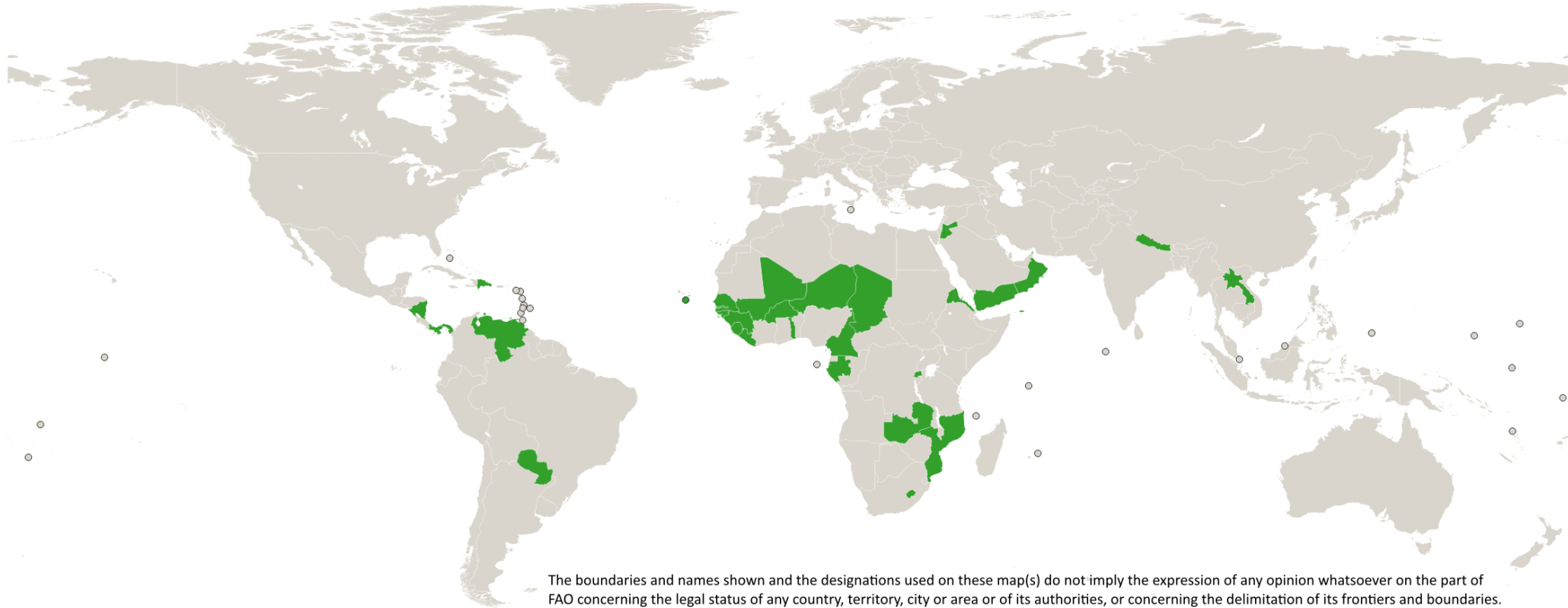


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## NARI focused systems

In 29 countries (2 in Asia-Pacific) ~2/3 of the researchers are in the NARI



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# THANK YOU!

