DOST Food Safety Program – R&D

POSSIBLE SOLUTIONS

VISION

Safe food for everyone, by everyone, through science, technology and innovation

Integrated Food Safety R&D Program

- R&D to Support Risk Assessment in Philippine Food
- R&D in Support to Food Industry (Informal Sectors, Food Manufacturers, Food Service)
- R&D to Support Food Testing of Microbiological & Chemical Hazards
- Establishment of Food Safety R&D Hubs

Problems/Concerns:

- Food-borne diseases
- Product detentions
- Inadequate technical support for MSMEs
- Knowledge gap on food safety of Philippine Food Supply
- Lack of science-based evidence for food safety policies and guidelines

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P 196.7 M

- Standards Development to Ensure Safety of Priority Products
- R&D to support food industry in the time of pandemic and beyond
- Development of MSMEs' Traceability Systems
- Establishment of Safety Protocols in the Delivery of Freshly Cooked Foods and Fresh Salads and Cut Fruits
- Food packaging hazard migration studies
- Study on Chilled Ready to Heat and Ready to Eat Foods Sold in Convenience Stores
- Validation of 3M Philippines Test Methods for the Detection of Food Allergens
- NICER for Food Safety Risk Profiling
- NICER for Antimicrobial Resistance

2022-2023

Draft PNS and RCP for priority products
MSMEs Traceability System
Policy measure on the delivery of freshly cooked foods and fresh salads and cut fruits
Food Safety Risk Profiles
Risk assessment for AMR emergence and spread

P114 M

- Philippine Total Diet Study Program : Artificial sweeteners
- Exposure assessment study: *L. monocytogenes*
- Hazard contamination assessment: Microplastics
- Food packaging hazard migration studies

2024

Dietary exposure estimates and prevalence data on the selected hazards
Data on level of microplastic contamination in aquatic products
Scientific data on food packaging contaminants
Draft PNS and RCP endorsed to BPS for adoption
Proposed policy measures in handling and storage of chilled RTH/RTE foods
Food Safety Risk Profiles
Risk assessment for AMR emergence and spread

P90 M

- Philippine Total Diet Study Program : Veterinary drug residues
- Exposure assessment study: *L. monocytogenes*
- Development of Guidance Manual on Safety Aspects of Food Processing Equipment

2025

Dietary exposure estimates and prevalence data on the selected hazards
Scientific data on food packaging contaminants
Draft PNS and RCP endorsed to BPS for adoption
Data on local fabricators' current practices on food processing equipment
Rapid test kits developed
Established Risk Profiling Center
Established database on AMR occurrence

P47.5 M

- Philippine Total Diet Study Program Vet. Drug residues
- Exposure assessment study: *E. coli*

2026

Dietary exposure estimates and prevalence data on the selected hazards
Scientific data on food packaging contaminants
Food Safety guidance manual for food processing equipment
Draft PNS and RCP endorsed to BPS for adoption

P75 M

- Philippine Total Diet Study Program : Pesticide residues
- Exposure assessment study: *E.coli*
- R&D studies on Predictive microbiology

2027-2028

Dietary exposure estimates and prevalence data on the selected hazards
Scientific data on food packaging contaminants
Validated Predictive Microbiology Statistical software
Draft PNS and RCP endorsed to BPS for adoption

MILESTONES

Program Objectives:

1. To conduct risk assessment studies to support national risk management
2. To conduct R&D to facilitate the compliance of the food manufacturers, food service and informal sectors to food safety guidelines and regulations
3. To conduct R&D to support food testing of priority chemicals and microbiological hazards including emerging pathogens
4. To establish R&D Hubs to support food safety R&D activities

DOST Food Safety Program – S&T Services

POSSIBLE SOLUTIONS

VISION
Safe food for everyone, by everyone, through science, technology and innovation

S&T Services on Food Safety – ACTION TRACKS

- Enhancement of testing capabilities (chemical and microbiological) for new food safety parameters to address market and regulatory requirement
- Development of proficiency testing materials for food safety
- Development and implementation of systems and procedures for new food safety related parameters
- Integration and promotion of new food safety related parameters to customers under the OneLab network

Problems/Concerns:

- Food-borne diseases
- Product detentions
- Inadequate technical support for MSMEs
- Knowledge gap on food safety of Philippine Food Supply
- Lack of science-based evidence for food safety policies and guidelines

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P 517.88 M

- Application of globally-accepted methods for food safety parameters: validation and standardization - trans-fat, nutritive sweeteners; verification - *Salmonella*
- Provision of analytical testing services for quality assessment of local products: VCO parameters and shelf-life testing
- Establishment of nuclear and isotope-based technology for food safety
- Establishment of the National Food Safety Reference Laboratory
  - Proficiency Testing (PT) provision for analysis of food safety parameters
  - Development of Quality Control Material and Provision of PT Scheme for Food Microbiological Laboratories
- Enhancement of shelf-life testing in the regions – chips, dried fruits using moisture accelerated method

2022-2023

DOST Methods for Food Safety Testing

VCO testing provided to MSMEs

Proficiency testing provided – rice flour (chem) and meat product (micro)

Nuclear and isotope-based technologies established

P335.86 M

- Application of globally-accepted methods for food safety parameters: validation and standardization – preservatives, histamine, stabilizers; verification - *E.coli, S.aureus*
- Provision of analytical testing services for quality assessment of local products: methanol in lambanog
- Enhancing calibration services in support to food safety
- Food irradiation for food bioburden reduction
- Development of Food Reference Materials
- Enhancement of shelf-life testing in the regions – juice and beverages using direct method and temperature accelerated method

2024

DOST Methods for Food Safety Testing

Improved quality in lambanog and distilled spirits with safe level or zero content of methanol

New calibration services of food processing tools and equipment offered

Methods for detection of irradiated foods

Food reference materials developed – fish muscle for selected minerals and heavy metals

Shelf-life method established in the regions

P258.11 M

- Application of globally-accepted methods for food safety parameters: validation and standardization - sorbates, antibiotic residue; verification - *Listeria*
- Provision of analytical testing services for quality assessment of local products: histamine testing for local and export food products
- Roll-out of nuclear techniques to test food authenticity and traceability
- Detection of toxins and adulterants using radioassays
- Detection of food pathogens using molecular method
- Enhancement of shelf-life testing in the regions – food supplements using direct method

2025

DOST Methods for Food Safety Testing

AOAC Southeast Asia-harmonized method - preservative

MSMEs assisted with histamine testing

Nuclear-based analytical techniques developed

Radio assay methods for detection of toxins and adulterants

Molecular detection of food pathogens established among the regions

Shelf-life method established in the regions

P 228.86 M

- Application of globally-accepted methods for food safety parameters: validation and standardization - synthetic dyes, colorants, commercial sterility; verification - *Vibrio spp*
- Provision of analytical testing services for quality assessment of local products: bacterial profile of street-vended foods
- Enhancement of shelf-life testing in the regions – food supplements using temperature accelerated method
- Enhancement of food packaging materials in the regions

2026

DOST Methods for Food Safety Testing

AOAC Southeast Asia-harmonized method – coloring agent

LGUs/street vendors assisted

Regional laboratories capable of testing food packaging materials for overall and specific migration

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P159.75 M

- Application of globally-accepted methods for food safety parameters: validation and standardization - pesticide residues; verification - *B. aureus*
- Provision of analytical testing services for quality assessment of local products: antibiotic levels in dairy products
- Enhancing calibration services in the region

2027-2028

DOST Methods for Food Safety Testing: pesticide residues, antibiotic residues, *B. cereus*

AOAC Southeast Asia-harmonized method: allergens

Local dairy products tested for antibiotics

Calibration services rendered to MSMEs

MILESTONES

Program Objectives:

1. To enhance the chemical and microbiological testing capabilities for new food safety parameters to address market and regulatory requirements
2. To develop food safety related proficiency testing reference materials
3. To develop and implement effective systems, processes and protocols on food safety

DOST Food Safety Program - HRD

POSSIBLE SOLUTIONS

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DOST Human Resource Development Program on Food Safety

• Competency-based Training Program for DOST (& non-DOST) Food Safety Team members, R&D personnel, Lab analysts, and LGUs
• Development of Food Safety Training Modules
• Development of Massive Open-Online Course on Food Safety
• Food Safety In Disaster Management

Problems/Concerns:

• Food-borne diseases
• Product detentions
• Inadequate technical support for MSMEs
• Knowledge gap on food safety of Philippine Food Supply
• Lack of science-based evidence for food safety policies and guidelines

P18.7 M
• Development of Competency-based Evaluation Criteria and Training Plan
• Competency-based Human Resource Development Project
• Updating and Development of Food Safety Training Modules
• Development of Massive Open-Online Course on Food Safety
• Food Safety in Disaster Management
• FSRCB Committee on Food Safety Education, Trainings and Advocacies

P14.5 M
• Competency-based Human Resource Development Project
• Updating and Development of Food Safety Training Modules

P10.5M
• Competency-based Human Resource Development Project
• Development of Food Safety Training Modules

P4.5 M
• Competency-based Human Resource Development Project
• Food Safety Training Impact Assessment

P4 M
• Competency-based Human Resource Development Project
• Food Safety Training Impact Assessment

2022-2023
Developed Competency evaluation rubric

Training Plan for DOST (and non-DOST) Food Safety workforce

Trained DOST (and non-DOST) workforce and LGUs on Food Safety during disaster management;

Guidelines in recognition of food safety training institutions and/or providers

2024
Trained and competent DOST (and non-DOST) Food Safety workforce

Updated Food Safety training modules

Food Safety massive open online course launched

Guidelines on food safety during disaster management

Harmonized Food Safety Training Curriculum / Training Programs/Courses

Developed Guidelines in recognition of food safety training institutions and/or providers

Harmonized Food Safety Training Curriculum / Training Programs/ Courses

2025
Trained and competent DOST (and non-DOST) Food Safety workforce

Developed unified Food Safety Training modules

Food Safety training modules endorsed to FSRCB

FSRCB-approved guidelines on food safety management during disaster operations

Launched and deployed one model kitchen/facility for disaster relief operations

Developed Guidelines in recognition of food safety training institutions and/or providers adopted and implemented

Harmonized Food Safety Training Curriculum / Training Programs/Courses adopted and implemented

2026
Trained and competent DOST (and non-DOST) Food Safety workforce

Launched and deployed training modules

Training modules recognized by FSRCB

Food Safety Training Impact assessment report

2027-2028
Trained and competent DOST (and non-DOST) Food Safety workforce

Food Safety Training Impact assessment report

MILESTONES

Program Objectives: To further capacitate and expand the Food Safety Team members from DOST and other stakeholders

DOST Food Safety Program – Knowledge & Technology Transfer

Knowledge and Technology Program on Food Safety

- Food Safety Technology Transfer Program (Action Track 1: Access to safe nutritious food for all)
- Food Safety Technology Transfer Program (Action Track 5: Build resilience to vulnerabilities, shocks and stress)

Problems/Concerns:
- Food-borne diseases
- Product detentions
- Inadequate technical support for MSMEs
- Knowledge gap on food safety of Philippine Food Supply
- Lack of science-based evidence for food safety policies and guidelines

POSSIBLE SOLUTIONS

P 90 M
- OneDOST Food Safety Website (Maintenance 2023 onwards)
- DOST Food Safety Fora and Summit
- Deployment of Harmonized Food Safety Modules
- Forum on Determination of Technology Readiness Level of Food Safety Technologies
- Support for Commercialization of Food Safety Technologies in the Regions
- Food Safety Month Celebration

P45 M
- DOST Food Safety Fora and Summit
- Deployment of Food Safety Modules
- Support for Commercialization of Food Safety Technologies
- Food Safety Month Celebration
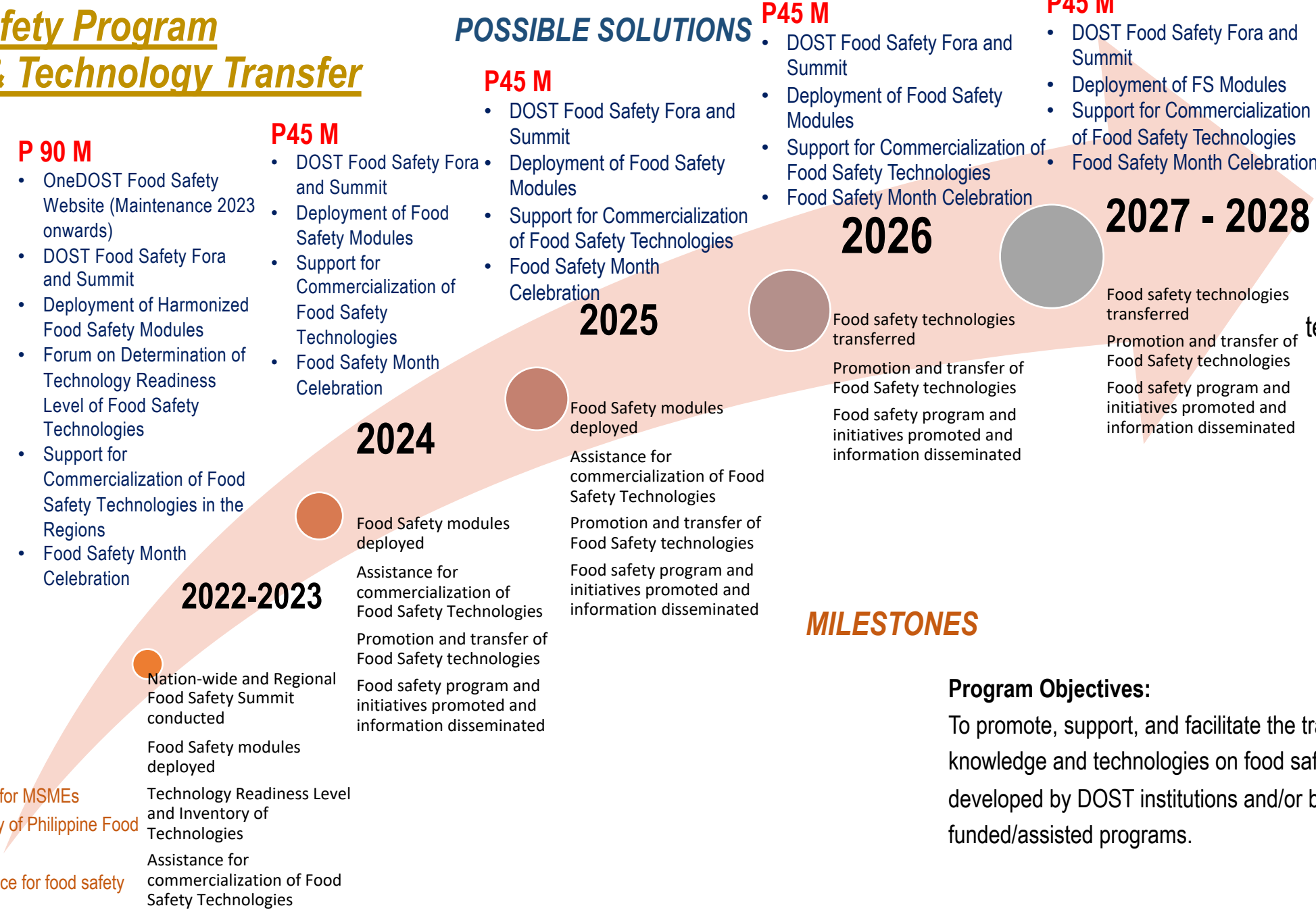
P45 M
- DOST Food Safety Fora and Summit
- Deployment of Food Safety Modules
- Support for Commercialization of Food Safety Technologies
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P45 M
- DOST Food Safety Fora and Summit
- Deployment of Food Safety Modules
- Support for Commercialization of Food Safety Technologies
- Food Safety Month Celebration

P45 M
- DOST Food Safety Fora and Summit
- Deployment of FS Modules
- Support for Commercialization of Food Safety Technologies
- Food Safety Month Celebration

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2022-2023
- Nation-wide and Regional Food Safety Summit conducted
- Food Safety modules deployed
- Technology Readiness Level and Inventory of Technologies
- Assistance for commercialization of Food Safety Technologies

2024
- Food Safety modules deployed
- Assistance for commercialization of Food Safety Technologies
- Promotion and transfer of Food Safety technologies
- Food safety program and initiatives promoted and information disseminated

2025
- Food Safety modules deployed
- Assistance for commercialization of Food Safety Technologies
- Promotion and transfer of Food Safety technologies
- Food safety program and initiatives promoted and information disseminated

2026
- Food safety technologies transferred
- Promotion and transfer of Food Safety technologies
- Food safety program and initiatives promoted and information disseminated

2027 - 2028
- Food safety technologies transferred
- Promotion and transfer of Food Safety technologies
- Food safety program and initiatives promoted and information disseminated

MILESTONES

Program Objectives:
To promote, support, and facilitate the transfer of knowledge and technologies on food safety developed by DOST institutions and/or by DOST-funded/assisted programs.

DOST Food Safety Program–Policy Advocacy:
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POSSIBLE SOLUTIONS

Issues/Concerns
- Lack of science-based safety policies and guidelines
- Outdated food safety-related policies/laws
- Lack of FS champions in various levels of governance
- Lack of participation of business associations, MSMEs and chambers of commerce in the FS policymaking environment

P 21 M
- Review of the Food Safety policymaking environment
- Development of policies as a result of R&D
- Dissemination and adoption of science-based policy recommendations
- Engagement of FS champions at all governance levels and in the business sector/MSMEs

P24 M
- Development of policies as a result of R&D
- Dissemination and adoption of science-based policy recommendations; all platforms
- Engagement of FS champions at all governance levels and in the business sector/MSMEs
- Monitoring and evaluation of Policy Advocacy Campaign

P29 M
- Development of Policies as a result of R&D
- Dissemination and Adoption of Science based policy recommendations, all platforms
- Engagement of FS champions at all governance levels and in the business sector/MSMEs
- Monitoring and Evaluation of Policy Advocacy Campaign

P34 M
- Development of Policies as a result of R&D
- Dissemination and Adoption of Science based policy recommendations, all platforms
- Engagement of FS champions at all governance levels and in the business sector/MSMEs
- Monitoring and Evaluation of Policy Advocacy Campaign

P40 M
- Development of Policies as a result of R&D
- Dissemination and Adoption of Science based policy recommendations, all platforms
- Engagement of FS champions at all governance levels and in the business sector/MSMEs
- Monitoring and Evaluation of Policy Advocacy Campaign

2022-2023
- Review of existing policies or laws
- Engagement meetings with RDCs, MSMEs associations, chambers of commerce & LGUs to identify FS gaps
- Partnership with RRDICs (e.g. creation of an FS unit and as conduit of FS policies for RDC approval)
- Identification of policy implications from completed R&D projects
- Identification of FS policy champions at all levels of governance
- Dissemination of drafted policies through various platforms
- Crafting of M&E tools for various policy advocacy platforms

2024
- Identification of policy implications from completed R&D projects
- Crafting of policy statements/briefs (large/medium/MSMEs)
- Implementation of findings of Policy Environment analysis
- Conduct of Legislative/policy forums and other platforms
- Social media for FS policy campaign
- Partnership with RDCs
- Engage FS policy champions in DOST programs
- M&E of Policy advocacy campaign, all platforms

2025
- Identification of policy implications from completed R&D projects
- Crafting of policy statements/briefs (large/medium/MSMEs)
- Implementation of findings of Policy Environment analysis
- Conduct of Legislative/policy forums and other platforms
- Social media for FS policy campaign
- Partnership with RDCs and chambers/MSME associations
- Engage FS policy champions in DOST programs
- M&E of Policy advocacy campaign, all platforms
- Inclusion of FS policies in the Regional Development Agenda, and municipal/city Investment and Development Plans

2026
- Identification of policy implications from completed R&D projects
- Crafting of policy statements/briefs (large/medium/MSMEs)
- Implementation of findings of Policy Environment analysis
- Conduct of Legislative/policy forums and other platforms
- Social media for FS policy campaign
- Partnership with RDCs and chambers/MSME associations
- Engage FS policy champions in DOST programs
- M&E of Policy advocacy campaign, all platforms
- Inclusion of FS policies in the Regional Development Agenda, and municipal/city Investment and Development Plans
- Conduct of impact assessment of the FS Policy Advocacy campaign/program

2027 - 2028
- Identification of policy implications from completed R&D projects
- Crafting of policy statements/briefs (large/medium/MSMEs)
- Implementation of findings of Policy Environment analysis
- Conduct of Legislative/policy forums and other platforms
- Social media for FS policy campaign
- Partnership with RDCs and chambers/MSME associations
- Engage FS policy champions in DOST programs
- M&E of Policy advocacy campaign, all platforms
- Inclusion of FS policies in the Regional Development Agenda, and municipal/city Investment and Development Plans
- Conduct of impact assessment of the FS Policy Advocacy campaign/program

MILESTONES/OUTPUTS

- Analysis of policymaking environment
- Policy statements/policy briefs generated from completed research
- M&E tools: various policy advocacy platforms
- List of FS champions at all governance levels and in the business sector/MSMEs
- FS committee in the RRDICs created

Year 1 plus:
- Policy statements/policy briefs accepted/used by policymakers (national and local levels)
- M&E tools used by FS program implementers
- FS champions engaged in policy advocacy and campaign (national/local; formal/informal business sector; MSMEs)

Years 1 and 2 plus:
- Amendment to policies/laws
- FS policies included in LGU investment and development plans
- FS policy advocacy included in Regional Development Agenda
- M&E tools used and results analyzed

Larger scale/nation-wide:
- Policy statements/policy briefs accepted/used by policymakers
- Inclusion of FS policies in regional agenda and local investment plans
- FS champions engaged in policy advocacy and campaign (national/local; formal/informal business sector; MSMEs)
- M&E tools used by FS program implementers
- Action based on results of the Impact assessment