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附件：如文(ATTCH1 2\_FFTC-ProjectProposalTemplate\_2023.odt、ATTCH2 3-0\_RollingActionPlan2023-2024\_Draft.pdf、ATTCH3 3-1\_Appendix\_1\_Draft.pdf、ATTCH4 3-2\_Appendix\_2\_Workshops2021\_2022\_Draft.ods、ATTCH5 3-3\_Appendix\_3\_AP\_Workplan\_Draft.ods、ATTCH6 1110063084.odp)

主旨：有關亞洲太平洋地區糧食與肥料技術中心(FFTC)辦理徵求2023年合作活動提案，請查照惠復。

說明：

- 一、依據FFTC本(111)年7月13日DC220037I號信函辦理。
- 二、FFTC 2021年至2024年策略行動計畫著重「強化農業研發與投資以提升生產力」、「增進食物價值鏈與消費者導向生產」、「推廣氣候智慧與調適型農業」、「促進循環農業」及「強化資源管理及鄉村發展」等5大主題，經過滾動檢討，2023年至2024年將聚焦「劇變環境下強化農業生產系統創新及數位化」、「重塑永續糧食價值鏈及建立農民、農業食品加工與分銷商及消費者間合作關係」、「加速氣候智能型農業發展以實現韌性生產及碳中和」、「在生產到消費的各階段提高對循環農業的認識」及「振興及穩定區域經濟及糧食生產」等重點。
- 三、FFTC歡迎我國農業學術及研究單位針對主題提案與該中心合作，經費由各單位自行籌措；另為確保活動品質及順利進行，FFTC將與潛在合作單位共同討論修改、強化提案，或將類似提案項目合併。

國立中興大學



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四、倘貴單位有意向FFTC提出合作計畫，請依附件格式研提計畫構想書，於本年8月22日前送本會(逾期視為無提案)，以利彙整後轉FFTC辦理。

五、檢附提案期程、格式及FFTC2023年至2024年滾動行動計畫(Rolling Action Plan)草案各1份(如附件)，請卓參。

正本：國立臺灣大學、國立中興大學、國立嘉義大學、國立屏東科技大學、中國文化大學、國立宜蘭大學、本會企劃處、本會畜牧處、本會輔導處、本會國際處、本會科技處、本會農糧署、本會漁業署、本會動植物防疫檢疫局、本會林務局、本會水土保持局、本會農田水利署、本會農業金融局、本會農業試驗所、本會林業試驗所、本會水產試驗所、本會畜產試驗所、本會家畜衛生試驗所、本會農業藥物毒物試驗所、本會特有生物研究保育中心、本會桃園區農業改良場、本會苗栗區農業改良場、本會臺中區農業改良場、本會臺南區農業改良場、本會高雄區農業改良場、本會花蓮區農業改良場、本會臺東區農業改良場、本會茶業改良場、本會種苗改良繁殖場、本會屏東農業生物技術園區籌備處

副本：亞洲太平洋地區糧食與肥料技術中心



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## FFTC PROJECT PROPOSAL TEMPLATE

<u>Project.</u>	<u>TITLE</u>
1. Type of activity:	Workshop/Seminar/Training/Symposium
2. Date and venue:	2023, City, Country
3. Organizers:	FFTC and _____
4. Partners:	ex. Council of Agriculture (COA); MAFF; PCAARRD; etc.
5. Budget:	US\$ _____

### 6. Rationale

*Briefly describe the relevance of the proposal especially its connection to FFTC's Strategic Action Plan and Rolling Action Plan. Also relate how the proposal can help the farmers improve their productivity, income and quality of life.*

### 7. Objectives

*We advice and prefer to use action words at the beginning of the sentence.  
Example:*

- To exchange knowledge and experiences on....
- To strengthen international cooperation....
- To increase the public's level of awareness on....

### 8. Expected participants

*Example:*

- Maximum of 12 speakers to include related experts from partner institutes and countries.
- Maximum of 100 onsite participants and 1,000 online participants open to the public to include researchers, local and national government officials, farmers, university professors, graduate students, related NGOs, and professionals in the agricultural sector.
- The event will be live-streamed, and the recording will be made available and accessible (expected to be viewed by thousands of people).

### 9. Possible themes

*Example:*

- Exchange and sharing of novel smart agricultural technologies contributing to the data-driven agriculture.
- Exchange and sharing of practical application cases at local and abroad.
- The symposium consists of three sessions;
  - Session 1: Recent status of "ABCD" problems in AP regions
  - Session 2: Application of advanced technologies to "EFGH"
  - Session 3: Construction of international collaborations for "XY"
- Travel and visit – Smart Agriculture Open fields, Tsukuba

- Others

## 10. Expected outputs

*Example:*

- Disseminate to the public the contribution and inheritance of traditional knowledge to the maintenance of biodiversity.
- Link the traditional ecological knowledge system with modern science and introduce the actual application in the rural environment and economy balancing cases.
- Explore a new collaborative management system to achieve the goal of coexistence between man and nature.

## 11. Responsibilities of FFTC

*Example:*

- Seek funding support and allocate the funds as indicated in the budget list.
- Help in identifying potential speakers and designing workshop program.
- Write and send the official invitation letters and facilitate in communicating with the speakers.
- Follow up of papers submission and constructed the proceedings and workshop guidebook.

## 12. Responsibilities of Partner Agency/Institute

*Example:*

- In charge of local logistics (scouting for venues, local transportation, booking of hotels) as local organizer.
- Host the videoconference through an expert company including registration of participants, creating the program, making announcements via posters and websites, making test runs and rehearsals.
- Online registration.
- Take the lead in helping identify and confirm the speakers.
- Follow up of papers and PPT presentations.
- Leasing of venue and facilities.
- Provide staff during the symposium
- Process the publication of the indexed proceedings

### 13. Budget

ITEM	AMOUNT (US\$) BY SOURCE	
	Co-organizer	FFTC
Air-tickets		
Honorarium		
Accommodations		
Domestic Travel		
Venue package		
Lunch/Teatime		
Dinner Party		
Printing (Proceedings, Posters, etc.)		
Seminar Kits		
Field Trip		
Contingency		
Subtotal		
<b>Total</b>		

# Rolling Action Plan 2023-2024 (Draft)

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# 1. Introduction

The COVID 19 pandemic, which began at the end of 2019, has had a major impact on the world. From the Global Risks Perception Survey, many countries report that the sociological risks such as, “social cohesion erosion”, “livelihood crises,” “mental health deterioration” have worsened since the pandemic began (The Global Risks Report 2022). It also says that the “climate action failure,” “extreme weather,” and “biodiversity loss” are the top three most critical long-term threats in which people of various countries are concerned about together with the current and future state of our planet. In the report of SDGs 2021, the global average SDG Index score for 2020 has decreased. It is the first time since the adoption of the SDGs in 2015. The lack of progress on SDG 2 (Zero hunger) has been exacerbated by the increasing number of malnourished people in the world, unsustainable production and consumption and the accelerated loss of biodiversity. These are all affecting the performance of SDGs 12-15 (Sachs 2021).

Globalization and trade liberalization of agricultural products are still increasing, and the stabilization of food supply is now getting to be a major concern. Many countries will pursue diversification of supply chains for key resources, and accordingly, conditions for procurement of resources in the international market will change. In the case of agriculture, food security will be emphasized. With trade liberalization over the past 30 years, agricultural trade has become one of the important elements of each country's food system. However, concerns about the possibility of changes in the global agri-food supply chain are growing due to the recent unstable international situation. In particular, as cases of using agricultural trade as leverage appear, there is a need to re-examine the country's existing food system in terms of the rising issue on food security.

The original document on the Agreement of Establishing FFTC said that “the increasing agricultural food production and raising farmer’s incomes are of primary importance for the development of the region.” Although the fundamental motive of FFTC is still unwavering, we are also now facing more daunting challenges, as mentioned above. To promote agriculture and rural development in the Asian Pacific region under rapidly changing environment-which we have never experienced, innovative behavior change is required as well as technological innovation.

In 2019, prior to the 2020 COVID-19 pandemic, FFTC wrote a final version of its “Strategic Action Plan (SAP) Focusing on Holding Workshops and Seminars for 2021-2024.” The said SAP acted as a supplementary material for the 25<sup>th</sup> FFTC-TAC meeting, which for the first time, was held via videoconference on July 21, 2020, during the height of the COVID-19 pandemic. In that meeting, the 11 TAC members who attended the videoconference agreed that the Center would

have to adjust and contextualize its present and future activities under the pandemic umbrella.

The following five themes highlight and underpin the current FFTC 2021-2024 Strategic Action Plan:

1. Increasing productivity by strengthening agricultural R&D and investments;
2. Enhancing food value chains and consumer oriented production;
3. Promoting climate-smart and resilient agriculture;
4. Fostering circular agriculture; and
5. Strengthening resource management and rural development.

Following the TAC recommendation of making the necessary adjustments in the current SAP and in preparation for the forthcoming 26<sup>th</sup> TAC meeting to be held on July 20, 2022, the Center management created a Task Force led by the Deputy Director and reviewed its activities from 2021 to 2022 and conducted a series of brainstorming sessions. The result is an adjusted “Rolling Action Plan” which hopes to serve as a guideline to the Center’s activities in the next two years. Each of the five themes has been given the following new perspectives and focus.





## 2. Center's vision, mission and current approaches

### Vision:

1. Move towards sustainable agriculture and food system;
2. Better rural development, resource management and improve farming efficiency; and
3. Empower small holder farmers and improve their livelihoods and well being

### Mission

1. Promote sustainable agricultural and rural development;
2. Bridge the gap between scientist and farmers;
3. Share new technologies and policies developed in different countries; and
4. Help close the technology gap between developed and developing countries

FFTC has been managing several types of activities to realize its mission.

#### 1) Projects

One of the crucial duties of FFTC is to identify and provide various kinds of timely and relevant agricultural topics in the Asian and Pacific region. Therefore, we have been managing several different types of activities, such as Workshops, Training courses, Networks, co-organized with organizations and institutes in Asian and Pacific countries. We call those activities Projects.

#### Workshops and Trainings

Since its inception in 1970, FFTC has organized various international workshops, seminars, symposia, training courses as part of its mandate to collect and disseminate information on agricultural technologies and policies. To date, nearly 425 seminars, workshops and training courses have been carried out in cooperation with international, regional, or national agricultural agencies. Because the COVID-19 pandemic has surged the whole world since December 2019, FFTC operated all its workshops and symposia in an online mode during 2020 and 2022. The list of workshops held in 2021 and 2022 is shown in **Appendix 1 and 2**.

#### Training course

Every now and then or as the need arises, the Center organizes and conducts various training courses to upgrade the technical skills of farmers and/or people involved or are engaged in agricultural activities. Some of the training courses recently conducted by FFTC include: The TARI-FFTC Training Course on “Edible Mushroom Production for Asian Farmers and Entrepreneurs (November 21-27, 2010); “Management and Utilization of Field Gene Banks and *In Vitro* Collection” (May 6-20, 2011); The FFTC-PCAARRD Training Course on “Dairy Herd

Improvement by the Use of Reproductive Biotechnologies (July 13-22, 2015); and “Ecosystem Approach to Fisheries Management (September 30-October 4, 2019).

## **Networks**

The primary purposes of networking projects are to facilitate the collaborative network for collecting and exchanging information and technology transfer of some agricultural issues. These projects are conducted whole year round for more than one year, and are still ongoing this year. Under those network projects, we also conduct workshops and/or fora.

### **Agricultural Policy Platform (AP Platform ) since 2013**

The aim of the AP Platform launched in 2013 is to share the latest papers and information on the agricultural policies and technologies to global readers who are interested in agricultural development and policy in the Asia-Pacific region. This project also features the publication of the FFTC E-Journal and conducts Agricultural Policy Forum since 2020 to actively broaden the global impact and facilitate sharing the multilingual Asia-Pacific agricultural information in English.

### **Dragon Fruit Network (DFNet) since 2017**

The Phase I DFNet Project (2017-2020) was developed by FFTC in response to the urgent needs in regional collaboration on and funding for R&Ds to tackle the key challenges of dragon fruit in cultivation and disease/pest controls. The project’s key tasks include formation of a dragon fruit research network, organization of dragon fruit workshops, and disseminating project information internationally. Due to the rapid growth of the production and markets of tropical fruits including dragon fruit in recent years, the Phase II Project (2021 – 2023) has expanded its crop focus and scope to the topics covering value chains and global markets of tropical fruits. Capacity development of smallholder farmers of tropical fruits in the Asian and Pacific region is necessary for them to be able to effectively participate in tropical fruit value chains and global markets. To achieve this, the project aims to collect and disseminate information internationally on technologies and services required for the successful production and marketing of safe and healthy fruits.

### **Proficiency Testing Program since 2018**

To evaluate the capability and performance of laboratories of soil testing and plant analysis in Asia-Pacific countries, FFTC and TARI, Taiwan Agricultural Research Institute, have been holding proficiency testing (abbreviation as PT) programs of soil testing and plant analysis since 2018. PT provides participating laboratories with the opportunity to compare their analytical results with other laboratories. The number of laboratories participating in the PT program organized by FFTC and TARI has increased from 25 in 2018 to 60 in 2020 and 52 in 2021.

## **Knowledge Management System since 2021**

In order to enhance Center's impact and efficiency, FFTC has started to digitalize all of its workshop publications and establish and practice the FFTC KM-project management and reporting system.



### **2) Disseminating information on agricultural technologies**

#### **Publications**

The most recent and relevant agricultural technologies and information collected by the Center through its various activities are documented and published in the forms of annual reports, technical and extension bulletins, workshop proceedings, books and newsletters. All publications are electronically available in the FFTC website for open access. The newsletters and annual reports are also published in hard copies.

#### **Website use**

FFTC manages and maintains its own website through this URL: <http://fftc.org.tw> The website continues to be updated and adjusted with the AP Project and DFNet having their own links to the FFTC main website.

#### **Social Networking Service**

The Center uses the social media via a Facebook page as a way to promote all the present and future activities of FFTC. A new development in the FFTC Facebook page is the livestreaming of online workshops as a result of the COVID-19 pandemic. FFTC used the Cisco WebEx platform and its Facebook page to livestream some international workshops.



### **3) Meetings**

#### **TAC meeting**

The FFTC's Technical Advisory Committee (TAC) is composed of 12 leading agricultural scientists/experts in the ASPAC region from Indonesia, Japan, Korea, Malaysia, Philippines, Thailand, Taiwan and Vietnam. These experts perform the following roles during the TAC meeting, which is held once every two years by the FFTC management: 1) review and provide advice on FFTC's policy, program, and themes in the formulation, implementation, and evaluation of FFTC's working programs and activities; 2) deliberate on the priorities of agricultural needs and requirements of countries in the region; and 3) recommend the suitable directions and strategies to improve the performance and effectiveness of the Center's operation.

#### **Executive Board (EB) meeting and Working Group (WG) meeting**

The Executive Board is the governing body of the Center, which approves all Center policies and establishes operational procedures and staff regulations. It also examines and approves the budget and financial operations of the Center and its annual work program.

The Working Group serves as a link between the Executive Board and the Center management and assists the Executive Board in evaluating the activities and proposals of the Center staff.



### 3. Proposal of Action Plan 2023-2024 under SAP 2021-2024

#### Objectives:

1. Review our activities under the current SAP and see if it could reflect the actual needs and demands of the agricultural sector in the Asian and Pacific region under the COVID-19 pandemic and climate change.
2. No significant modifications are required for SAP 2021-2024. Then we narrow down or add the issues in each theme that we think we should consider in the next two years and propose possible work plan.

#### Current five program themes

1. Increasing productivity by strengthening agricultural R&D and investments
2. Enhancing food value chains and consumer-oriented production
3. Promoting climate-smart and resilient agriculture
4. Fostering circular agriculture
5. Strengthening resource management and rural development

#### Review and Proposal

##### Basic concept

1. Providing technologies and knowledge information rooted in the agricultural environment within the Asian and Pacific region.
2. Each program theme is not independent and closely related to each other.
3. Consider raising the value of FFTC's activities, and venture into programs or projects which are unique and thus, could have greater audience impact. (by TAC recommendation at the virtual mid-Term TAC meeting held in July 2021)
4. Each theme of the Strategic Action Plan 2021-2024 is reviewed and Action plan is proposed.
5. Action Plan consists of "Review and Justification", "Focus points", "Possible Topics", and "Possible Work Plan (activities)."

**Review and Justification:** Review our activities over the last two years and link or relate this to the current agricultural situation in the Asian and Pacific region


**Focus points:** Emphasized points under each theme in the next two years

**Possible Topics:** Specific issues for each focus point to be considered. Topics to work with partner organizations

**Possible Work Plan:** Related possible workshops, networks, training courses, proposed by TAC members

## Theme 1: Increasing productivity by strengthening agricultural R&D and investments

### Review and Justification:



In 2021 and 2022, eight of FFTC's workshops were based under this theme, including five workshops on smart agriculture, which promoted the dissemination and utilization of ICT technologies. Implementation of smart agriculture is critical to solving several significant issues in the Asian and Pacific region as well as other regions in the world, such as small and fragmented farmlands, shortage in farm workers, ageing farmers, reduction in the number of the young generation who are engaged in farming, and transfer of technology to the successors. Therefore, many people registered and attended those workshops, in which the maximum number of registrants in one workshop was 901 coming from 37 countries. In the meantime, there is concern about introducing those advanced techniques that are expected to accelerate regional technological gaps. Issues on reduction of introduction and maintenance cost of ICT, capacity development, public support and role of private sectors were identified for further discussion. It is necessary to show the way beyond individual technologies. In terms of accelerating smart agriculture, enhancing development of suitable techniques and systems are essential. Breeding of suitable varieties, stable healthy seeds and seedling production, soil management and development of integrated pest management (IPM) technology are important factors.

Meanwhile, across the Asian Pacific Region, investments in agricultural Research and Development (R&D) to further narrow and reduce the digital divide are of critical importance. For example, in Japan, NARO has accelerated its R&D efforts toward the realization of Society 5.0 in the agriculture and food industry through the organization and management methods of its 5<sup>th</sup> Medium to Long-Term Plan. Specifically, it will carry out R&D under the four pillars of agri-food business, smart production system, agri-bio-system and robust agricultural system.

In Korea, investment in agricultural innovation is fundamental to ensuring the long-term competitiveness and sustainability of agriculture. Korea's agricultural innovation system has become more integrated and collaborative, benefiting from a strong advantage in ICTs and responding effectively to the needs of commercial farmers and agri-food firms.

The Philippines' Department of Science and Technology (DOST) has allocated funds for the setting up of six new niche centers for R&D to boost the resilience of the agriculture industry in the regions and ramp up efforts towards food sustainability under the new normal.

In Malaysia, improving productivity and income of farmers, fisher folk, and smallholders by accelerating adoption of ICT and farming technology, preserving and optimizing agricultural land, and identifying Research, Development & Commercialization (R&D&C) in a priority area is one of the seven strategies listed under its 11<sup>th</sup> Malaysian Development Plan.

Agriculture still plays an indispensable role in the lives of the Taiwanese. In recent years, with the emergence of new technologies such as artificial intelligence (AI), big data and environmental monitoring, traditional agriculture in Taiwan has been transformed to smart agriculture with multidisciplinary, multiregional cooperation and development.

Following the developments in the region, what the Center hopes to focus on at least in the next two years are innovation and digitalization of agricultural production systems in the entire food systems. This would include topics on intelligent crop, livestock and aquaculture management, healthy seeds and seedlings, roles of Small and Medium Enterprises (SMEs), accelerated adoption of ICTs and cross-country types of farming technologies. All of these are aimed at achieving productivity growth.

**Focus point: Enhance innovation and digitalization of agricultural production systems under changing environment**

**Possible Topics:**

- 1) Share and exchange information on the success stories and best practices in smart agriculture for farmers while contributing to the reduction of the digital divide
- 2) Foster the role of SMEs for implementation of smart agriculture in the region
- 3) Conduct practical training courses on big data analysis, greenhouse automation, intelligent crop, livestock and aquaculture management, farm management systems, etc.

**Possible Work Plan (activities):** see Appendix 3 (input TAC members project proposal)



**Theme 2: Enhancing food value chains and consumer-oriented production**

**Review and Justification:**

In 2021 to 2022, three workshops related to this theme were held. In the workshop organized with MARDI, blockchain technology to enhance reliability of agricultural products, application of e-commerce for connecting producers to consumers, and farmers' adoption for IoT were presented and recommendations on capacity development and better adoption of ICTs by smallholder farmers were made. DFNet II networking project promotes workshops for discussion and demonstration of Good Agricultural Practices (GAP), and e-commerce activities in the Asian and Pacific region. Fostering the supply chain using e-commerce may strengthen farmers' production and consumers' satisfaction. In addition, it will reduce intermediaries between producers and buyers, stagnation and loss in processing and distribution and will lead to activating the entire food chain, cost reduction, and profit increase.



Under the COVID-19 pandemic, internet shopping and food delivery systems have rapidly and widely expanded and helped facilitate food production. However, the growth of unsustainable food chains became wider than before. In the rolling AP, the overall concept is to regenerate sustainable food value chains and create mutual collaboration among farmers, agri-food processors and distributors, and consumers.

This means holding workshops with topics which are related to the advanced supply chain like postharvest handling facilities, cold chain system, and production forecasting which are very important in stabilizing food value chains. Other workshop topics would include, contract farming, community farming, other aspects including food processing, prolonging the shelf life of fresh produce, use of blockchain technology and traceability.

**Focus point: Regenerate sustainable food value chains and create a mutual collaboration among farmers, agri-food processors and distributors, and consumers**

**Possible Topics:**

- (1) Strengthen collaboration of farmers, agri-food processors and distributors, and consumers to create a sustainable food chain
- (2) Support farmers' participation in e-commerce from technical background and policy aspect
- (3) Organize workshops on GAP updates, the latest on postharvest handling technologies, cold chain, and food processing
- (4) Hold forums on product traceability systems and blockchain technology

**Possible Work Plan (activities):** see Appendix 3 (input TAC members project proposal)

**Theme 3: Promoting climate-smart and resilient agriculture**

**Review and Justification:**

For more than a decade now, FFTC and its partner organizations had global warming and climate change as one of its major workshop themes. Most of the workshop topics under this theme were concentrated on climate change adaptation measures especially as it relates to agriculture and food production. In 2021 and 2022, FFTC has prepared four workshops. Topics were extensive, among them, two major topics were discussed in collaboration with NARO: adaptation for utilizing advanced weather information techniques and the GHG reduction toward carbon neutrality by 2050. The other two topics include management and early warning systems for pests/diseases and animal production to promote a healthier utilization of animal vaccines and healthy feed additives against the increasing risks brought by antibiotic-resistant bacteria.



In 2021, in the recently held COP26 in Glasgow, the outcome clearly shows that each country's current GHG reduction efforts could not reach its targets. Moreover, to meet the 1.5 °C target agreed upon in the Paris Agreement, evidences showed that considerable efforts would be required to mitigate global warming. About a quarter of the world's GHG emissions come from agriculture and agricultural lands, and emissions from the Asian and Pacific region account for 44% of that. Meanwhile, the 6<sup>th</sup> Assessment Report WGII by IPCC says that “increased heatwaves, droughts and floods are already exceeding plants’ and animals’ tolerance thresholds,” and “accelerated action is required to adapt to climate change, at the same time as making rapid, deep cuts in greenhouse gas emissions.”

In the next two years, the Center’s management plans to focus its attention on holding workshops which tackle climate mitigation. It also entails the acceleration of climate-smart agriculture, which the World Bank describes as “an integrated approach to managing landscapes—cropland, livestock, forest and fisheries—that addresses the interlinked challenges of food security...” In the current SAP, it is mentioned that there is a concern about the effects of extreme weather events in agriculture. Therefore, adding to the list of current topics, we should also pay more attention to the climate change mitigation role in the agricultural sector, especially in livestock and field management in the region.

**Focus point: Accelerate climate-smart agriculture toward resilient production and carbon neutrality**


**Possible Topics:**

- (1) Enhance adoption of climate change mitigation systems in the agricultural sectors: synergies of production and GHG reduction
- (2) Utilize advanced weather information to prevent agricultural damages
- (3) Introduce risk assessment, business continuity plan, and new insurance system for resilient production and income for SSFs

**Possible Work Plan (activities):** see Appendix 3 (input TAC members project proposal)

## Theme 4: Fostering circular agriculture


### Review and Justification:



In 2020, FFTC held a two-day symposium on “The Practice and Benefits of Circular Agriculture in Waste Reducing and Recycling.” In the symposium, current knowledge and experiences on circular agriculture were shared; reducing and reusing food and agricultural wastes and byproducts, bringing added value to agri-food byproducts, and saving energy, water and agricultural chemicals for farmers' economic profits and reducing GHGs emissions. This time around, the Center’s action plan is to enhance more awareness on circular agriculture at all stages from production to consumption. This entails more promotion of the circular agriculture concept and the use of bio resources to produce more with less as well as the integration of the entire food chain and reduced food losses and waste. FFTC also conducted the "Circular Agriculture for Sustainable Healthy Diets" workshop in 2022 with VAAS. There is a wide range of topics under this theme; sustainable production and growth in agri-food systems and enhancement of public awareness and consumption of sustainable healthy diets. Malnutrition, obesity and non-communicable diseases related to dietary habits are also challenging issues in the region.

We are also facing a vast demand in animal production, meats, eggs, and dairy products in the Asian region, which cause significant structural changes in our global food systems. As Theme 2 clearly shows, the development of food chains and the progress of production that reflects consumer demands indicate that consumer awareness and behavior changes can drive sustainable agriculture. We will review traditional dietary habits and crop use in Asia from a new perspective, healthy diets for humans and the environment (recycling agriculture, climate change response, etc.) rather than going back to the past. Topics along this line would include the promotion of plant-based and healthy diets, green added value and bio-refinery.

In the 2021 and 2022 projects, soil and fertilizer management and interaction between soils and plants were discussed. Projects on proficiency testing (PT) has been conducted since 2018, which enhanced the capability and performance of soil testing and plant analysis laboratories in the Asian and Pacific region. The program also supports researchers in using analytical data to serve as reference for soil and fertilizer management. Understanding the potential function of ecological services is essential for soil management as well as pest and weed management.



**Focus point: Enhance awareness of circular agriculture at all stages, from production to consumption**

### Possible Topics:

- (1) Increase the awareness of indices to evaluate the circular agriculture systems: Life Cycle Assessment (LCA), carbon/nitrogen/phosphorus footprint
- (2) Reconsider the effectiveness of plant-based diets in Asia for attaining circular agriculture

- (3) Utilize regional resources for crop management based on the understanding of ecological services; ex. soil and plant analysis, biofertilizers and biopesticides

**Possible Work Plan (activities):** see Appendix 3 (input TAC members project proposal)

## **Theme 5: Strengthening resource management and rural development**

**Review and Justification:** One workshop was held in 2021 that tackled the topic of agricultural extension modalities that aimed to learn from the best practices and approaches used by agricultural extension workers in the region. This workshop provided an excellent opportunity to enjoin speakers and extension practitioners from other Asian countries to share their experiences. Extension modalities are diverse among countries with their peculiarities and complexities. However, we need to share many challenges of people in rural areas for the mutual improvement of the region.

Ten years ago, in 2012, FFTC organized and held a workshop in Taiwan on "Enhancement of rural community revitalization in the Asian and Pacific region." Since then, the issues hounding rural community revitalization and farming environment remain the same. We still have the same problems with the increasing ageing of farmers, abandoned farmlands, and economic gaps between rural and urban areas. Therefore, we need to review the changes in the rural situation over the last decade and discuss the future outlook for the region under and beyond the COVID-19 pandemic. Impacts of regional trade agreements (such as CPTPP) on farmers are also essential and recent growing issues in the region. Under this theme, the FFTC management plans to focus its attention on the revitalization and stabilization of the regional economy through food production. This involves a community-based approach to generate more jobs and integrate various activities to enhance rural regeneration. With the COVID-19 pandemic still in our midst, topics like e-commerce are seen to help rural folks to improve their incomes. The development of eco-tourism is also one way of accelerating the economic transformation in rural areas. This involves entrepreneurial skills, developing local products, strengthening leadership, building infrastructure, capacity development, etc.

In 2019, FFTC held the international symposium on "Implementing the Satoyama Initiative." The symposium aims to share the experiences on rural communities' environmental improvement and rural resource management and how to use rural resources more smartly to balance the economic needs and ecological and cultural preservation.

Technical aspects related to those issues are also proposed and discussed with other themes. Therefore, we need to discuss more policy aspects and implement advanced technologies to

revitalize the regional economy and communities.

**Focus point: Revitalize and stabilize the regional economy and food production**

**Possible Topics:**


- (1) Search new perspectives of connecting urban and rural areas under and beyond the COVID-19 pandemic: eco-tourism, smart-village, emigration to the rural area
- (2) Foster circular local economy and enhance rural production ecosystems under regional trade agreements
- (3) Foster the harmonization of human activities with the conservation of natural resources

**Possible Work Plan (activities):** see Appendix 3 (input TAC members project proposal)



## 4. Operational strategy under the current environment

### Project: Workshops



Since the COVID-19 pandemic shook the world and disrupted practically all activities in 2020, FFTC shifted gears and organized all its workshops and symposia via the online and/or videoconference mode. Videoconference is the alternative way of face-to-face meeting during the era of the COVID-19 pandemic and an effective way to increase the number of participants as well as saving on budget costs. Now, FFTC also does livestreaming of its videoconferences through its Facebook page so that people who do not have a PC can easily access workshops through their notepads and smartphones. The Center management has found that disseminating FFTC activities through livestreaming could multiply its audiences widely and could reach more farmers, members of the private sectors, university students, etc. However, the videoconference mode has some disadvantages compared to the on-site meeting such as 1) Reduction in the opportunity to engage in long talks and exchange of ideas among attendees, 2) Difficulty to know the actual reaction of the audience, 3) Difficulty to run a training course with online mode, 4) Difficulties of some participating countries due to time zone difference, network/technical conditions or security reasons. In two years, the FFTC management has accumulated knowledge and experiences in holding workshops in both onsite and online modes. We will propose a hybrid-type project after the COVID-19 pandemic to take advantage of both modes of conferences.

### Process of screening workshops for next year

FFTC requests TAC members to propose new projects. After receiving proposals the FFTC management starts internal discussion to screen several workshops based on some criteria: 1) Significance and relevance of focus points of Action Plan, 2) Balance of the project topics, and 3) available manpower and corresponding budgets.

Project operation manual “The Standard Procedures and Timeline for Project Coordinators – How to Prepare, Implement and Report” has been updated to suit changing environment to serve as a guide to coordinators in the preparation and operation of workshops from the project proposal stage to its post activities.

### Project: Networks

The targets of the Network projects are the common agricultural challenges faced by countries in the Asian and Pacific region, such as issues hounding the tropical fruits value chains, soil management, smart agriculture, etc. FFTC serves as a hub function that collects and provides technical and practical information to stakeholders and supports the building of collaborative



relationships in the region. In addition to the current four network projects, AP Platform, DFNet, PT Program and KM system, the FFTC management launched a new information platform for Biofertilizers and Biopesticides in 2022. To promote the strengthening of cooperation in the agricultural sectors of the region, FFTC will continue to operate those Network projects.

### **Information dissemination**

Information dissemination is crucial to any organization, and FFTC, being an agricultural and policy information Center, takes this very seriously. FFTC regularly manages several different types of media which are described in the “Center’s vision, mission and current approaches.” The Center’s own website continues to be updated and adjusted so that visitors can access appropriate information and have linkages to the AP Platform and the DFNet website. The AP Platform recently launched the “FFTC E-Journal” similar to the SSCI-Indexed journals on Asian-Pacific agricultural policy analysis and strategic development. The said Journal publishes two special issues per year and contains current significant topics on agriculture in the Asian and Pacific region.

Another recent project is the FFTC Knowledge Management (KM) system, which was initiated last year to easily store and retrieve the Center’s workshop proceedings, books and publications over the last 50 years. In this ongoing work on the KM system, FFTC has started to digitalize its workshop publications and related articles and after completion, will soon make this open and accessible to the public. It will also integrate several functions so that project coordinators can manage the workshops smoothly like operationalizing the online workshop registration, sending out of Electronic Direct Mails (EDMs), documenting and analyzing participants’ feedback, and sending out of certificates to the workshops’ speakers and participants.

### **Strengthen and broaden networks**

FFTC obtained useful findings from the analysis of the registrants of the 11 workshops held in 2021. The major sectors and countries of workshop attendees varied depending on the workshop topics. For example, in the themes on “Data-driven agriculture” and “DFNet workshops”, the maximum registration percentage coming from private companies was recorded at around 20%. The goal then is to accelerate and strengthen the relationship among different sectors and establish stable food chain systems—these are all essential in technology transfer.

The countries of registered participants are diverse; not only from FFTC member countries and TAC member countries, but also from East Asia, Africa, South America, the US, and European countries, etc., up to 37 countries were counted. Those analysis results showed that the FFTC activities are drawing the attention of different sectors from many countries, and these could serve as good opportunities to strengthen cooperation among them.

Currently, FFTC has forged 12 MOUs and MOAs with many institutions, and the management

will continue to strengthen its relationships with leaders of organizations and expand the number of partners who agree to promote and collaborate with the Center in its projects. In addition, the Center management will also continue visiting institutes, universities, organizations and foreign representative offices to introduce FFTC activities and invite their representatives to participate in FFTC activities and workshops.

In the same light, through networking and promotion of its activities, the Center management hopes to be able to search and/or get additional funding for its various activities.



## 5. References and Appendices

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## **FFTC web site**

FFTC home page (English)

<https://www.fftc.org.tw/>

Dragon Fruit Network (DF Net)

<https://dfnet.fftc.org.tw/>

Agricultural Policy Platform (AP Forum)

<https://ap.fftc.org.tw/>

Knowledge Management Platform (KM system)

<https://km.fftc.org.tw/>

## **Appendices**

Appendix 1: Overview of the Projects in 2021-2022 and Strategic Action Plan 2021-2024

Appendix 2: Title of workshops held in 2021-2022

Appendix 3: Table of Action plan 2023-2024





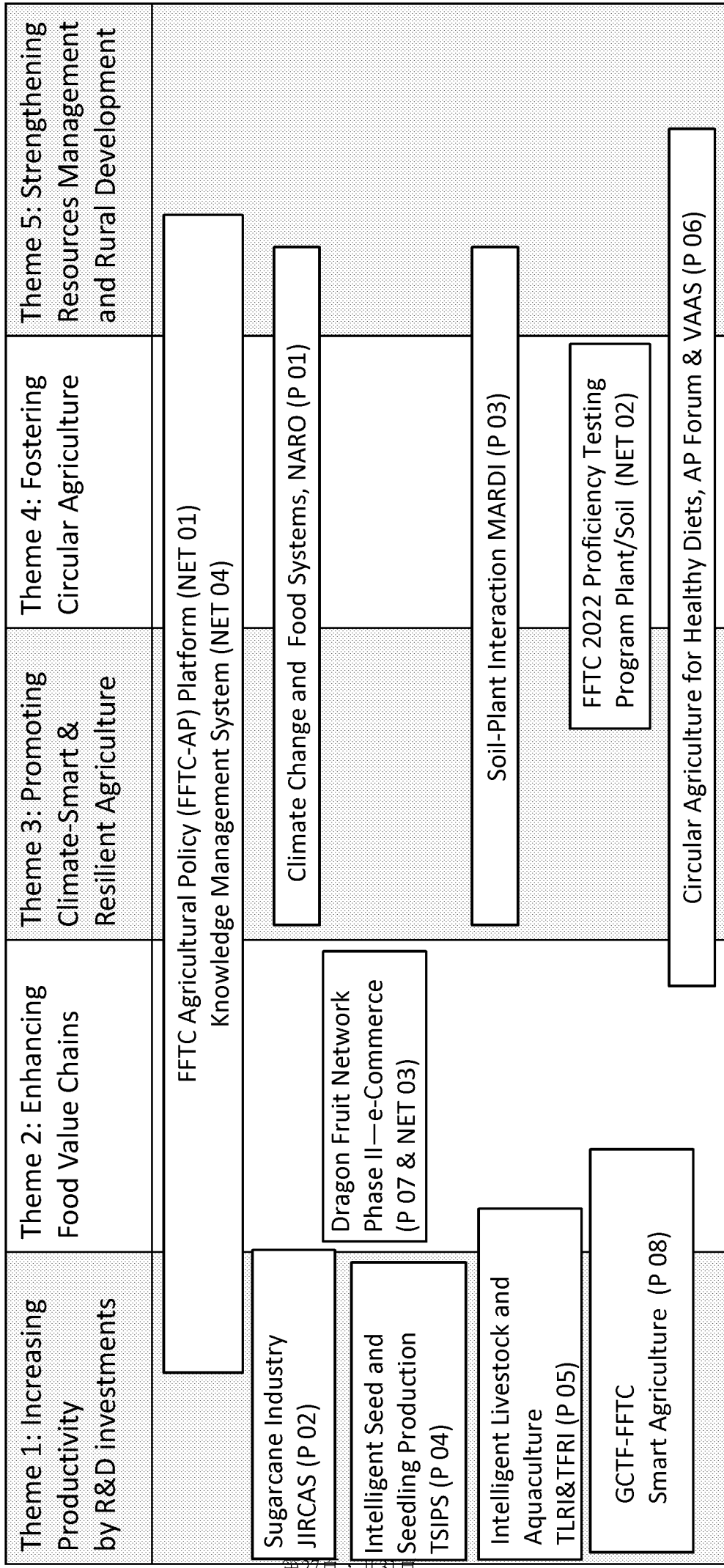
# Overview – 2021 Projects and Strategic Action Plan 2021 - 2024

Theme 1: Increasing Productivity by R&D and investments	Theme 2: Enhancing Food Value Chains	Theme 3: Promoting Climate-Smart & Resilient Agriculture	Theme 4: Fostering Circular Agriculture	Theme 5: Strengthening Resources Management and Rural Development
FFTC 50 <sup>th</sup> Anniversary Event & Symposium (P01, P02)				
Agricultural Sensors Technology and Smart Supply Chain, IPB (P 02)		Animal Vaccines, Health Promotion Feed Additives, Antibiotic Free TLRI (P 06)		Agricultural Extension Modalities, PCAARRD, NTIFO (P 05)
Agricultural DX, AI, Mobile Communication, 5G, Data Platform, NARO (P 03)		Monitoring, Early Warning, Pests and Diseases, BAPHIQ, TARI, APAARI. AFACI (P 07)		
Agri-food Supply Chain, IoT, Blockchain, E-commerce, MARDI (P 04)		Banana Diseases Control, VAAS(P 09)		
Dragon Fruit Network Phase II—GAP (P 11 & NET03)			FFTC 2021 Proficiency Testing Program Plant/Soil (P 08 & NET02)	
FFTC Agricultural Policy (FFTC-AP) Platform (P 10 & NET 01)				





# Overview – 2022 Projects and Strategic Action Plan 2021 - 2024



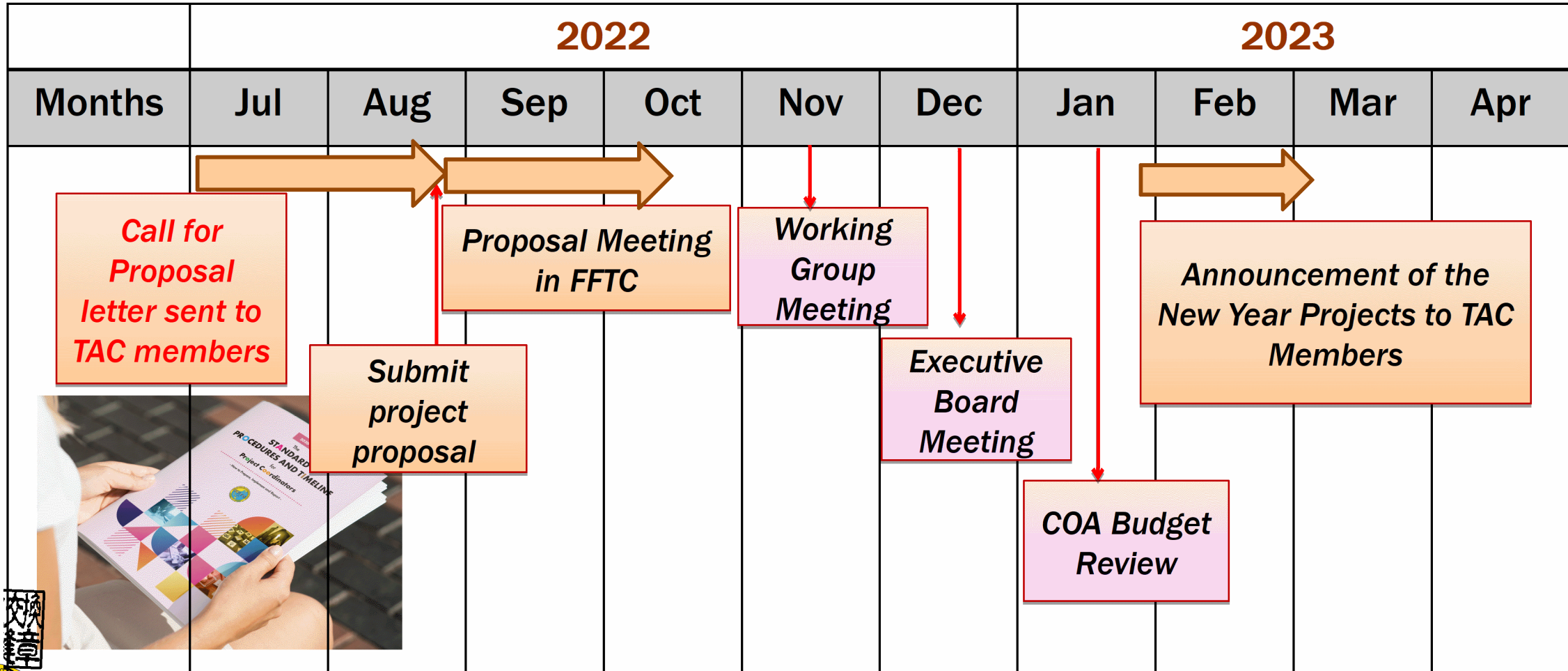
Strategic Action Plan 2021-2024		Workshops 2021-2022
Theme (SAP 2021-2024)	Main focus	Related workshops 2021-2022 (main co-organizer)
<b>1. Increasing productivity by strengthening agricultural R&amp;D and investments</b>	Promote the innovation of agricultural systems; smart agriculture, intelligent seeds and seedling production, etc.	2021: 1) Adaptation and Adoption of Agricultural Sensors Technology and Smart Supply Chain to Support Smallholder Farmers (IPB, 2021) 2) Data-Driven Agriculture in the Asian and Pacific Region- To ensure productivity and sustainability (NARO, 2021) 3) Application of IoT, Blockchain and E-commerce in Enhancing Agri-Food Supply Chains (MARDI, 2021) 4) The Way to Smart Agriculture Value Chain for Small-scale Farmers – Policies & Challenges (AP-Forum, 2021) 2022: 5) Intelligent Production of Livestock Industry and Aquaculture (TLRI & TFRI, 2022) 6) Challenges and Strategies for the Industrialization of Smart Agriculture (GCTF, 2022) 7) Innovation and Networking of Sugarcane Research for Future Sugarcane Industry in the Asian and Pacific Region (JIRCAS, 2022) 8) Establishment of an Intelligent Production System for Seeds and Seedlings (TSIPS, 2022)
<b>2. Enhancing food value chains and consumer-oriented production</b>	Find smarter ways to produce food and operate food businesses	2021: 1) Global/local GAP certification to enhance market opportunities -challenges and strategies (DFNet II, 2021) 2) Application of IoT, Blockchain and E-commerce in Enhancing Agri-Food Supply Chains (MARDI, 2021) 2022: 3) Enhancing international cooperation on tropical fruit value chains for global markets—DFNet II: E-commerce workshop (TARI&DFNet II, 2022)
<b>3. Promoting climate-smart and resilient agriculture</b>	Help mitigate the ill effects of climate change and strengthen climate-smart and resilient agriculture	2021: 1) Fostering Sustainable Management of Banana Diseases in Asia (VAAS, 2021) 2) Monitoring and Early Warning of Plant Pest and Disease Epidemics in Response to Climate Change (BAPHIQ, 2021) 3) Innovation and Application of Animal Vaccines and Health-Promotion Feed Additives for Antibiotic-Free Era in Livestock Industry (TLRI, 2021) 2022: 4) Climate change and food system—synergies of adaptation and mitigation, and climate information for sustainable and climate-resilient agriculture (NARO, 2022)
<b>4. Fostering circular agriculture</b>	Reduce negative impact to environment and create sustainable production systems	2021: 1) Proficiency Testing of Soil/Plant Analysis and Workshop on Data Interpretation and Fertilization Recommendation (TARI, 2021) 2022: 2) Circular agriculture for sustainable healthy diets—perspectives and policy implications in the Asian Pacific Region (VAAS & AP-Forum, 2022) 3) Role of healthy soil-plant interactions towards achieving resilient agriculture in the Asian Pacific Region (MARDI, 2022)
<b>5. Strengthening resource management and rural development</b>	Address the issues on poverty, rising income inequality, gender gaps, etc.	2021: 1) Best Practices and Approaches on Agricultural Extension Modalities (PCAARRD, 2021)



Strategic Action Plan 2021-2024		Action Plan 2023-2024		
Theme (SAP 2021-2024)	Main focus	Focus points for 2023-2024	Possible Topics	Possible Work plan (workshops/networks/training courses)
<b>1. Increasing productivity by strengthening agricultural R&amp;D and investments</b>	Promote the Innovation of agricultural systems; smart agriculture, intelligent seeds and seedling production, etc.	Enhance innovation and digitalization of agricultural production systems under changing environment	<ol style="list-style-type: none"> <li>1) Share and exchange information on the best practices in smart agriculture for farmers while contributing to the reduction of the digital divide</li> <li>2) Foster the role of SMEs, small and medium enterprises, for implementation of smart agriculture in the region</li> <li>3) Conduct practical training courses and workshops on intelligent production systems for crop, livestock and aquaculture management, and farm management systems, etc.</li> </ol>	
<b>2. Enhancing food value chains and consumer-oriented production</b>	Find smarter ways to produce food and operate food businesses	Regenerate sustainable food value chains and create a mutual collaboration among farmers, agri-food processors and distributors, and consumers	<ol style="list-style-type: none"> <li>1) Strengthen collaboration of farmers, agri-food processors and distributors, and consumers to create a sustainable food chain</li> <li>2) Support farmers' participation in GAP, and e-commerce from technical background and policy aspect</li> <li>3) Organize workshops on the latest postharvest technologies, cold chain, and food processing</li> <li>4) Hold forums on product traceability systems and blockchain technology</li> </ol>	
<b>3. Promoting climate-smart and resilient agriculture</b>	Help mitigate the ill effects of climate change and strengthen climate-smart and resilient agriculture	Accelerate climate-smart agriculture toward resilient production and carbon neutrality	<ol style="list-style-type: none"> <li>1) Enhance adoption of mitigation systems in the agricultural sectors: synergies of production and GHG reduction</li> <li>2) Utilize advanced weather information to prevent agricultural damages</li> <li>3) Introduce risk assessment, business continuity plan, and new insurance system for resilient production and income for SSFs</li> </ol>	
<b>4. Fostering circular agriculture</b>	Reduce negative impact to environment and create sustainable production systems	Enhance awareness of circular agriculture at all stages, from production to consumption	<ol style="list-style-type: none"> <li>1) Increase the awareness of indices to evaluate the circular agriculture systems: LCA, carbon/nitrogen footprint</li> <li>2) Reconsider the effectiveness of plant-based diets in Asia for maintaining circular agriculture</li> <li>3) Utilize regional resources for crop management based on the understanding of ecological services; ex. soil and plant analysis, biofertilizers and biopesticides</li> </ol>	
<b>5. Strengthening resource management and rural development</b>	Tackle remaining poverty, rising income inequality, gender gaps, etc.	Revitalize and stabilize the regional economy and food production	<ol style="list-style-type: none"> <li>1) Search new perspectives of connecting urban and rural areas under and beyond the COVID-19 pandemic: eco-tourism, smart-village, emigration to the rural area</li> <li>2) Foster circular local economy and enhance rural production ecosystems under regional trade agreements</li> <li>3) Foster the harmonization of human activities with the conservation of natural resources</li> </ol>	



# Preparing Proposed Y2023 Projects



# Call for the next year's (2023) project proposal from TAC members

## *Project Screening criteria*

1. Significance and relevance of Focus points of the Rolling Action Plan
2. Balance of the projects as they correspond to the five program themes and the proposed venue and countries
3. Hybrid mode (onsite plus online)
4. Available manpower
5. FFTC allocated budget range and counter funds by the co-organizers, at least 20 % of total project budget

Please submit 2023 project proposals by the end of August

