



# CACCI

## Food & Agriculture Newsletter

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### Message from CACCI Director-General

As Director-General of CACCI, I am pleased to present the seventeenth issue of the Newsletter of the Asian Council on Food and Agriculture (ACFA) to all our colleagues in the food and agriculture sectors, and other CACCI members and associates.

This issue highlights the trends, the latest news and interesting reports on food and agriculture in the Asia-Pacific region. I hope that you will find the articles included in this Newsletter of great value, and look forward to your contribution to the Newsletter in the future.

As many of you may know, this Council has been a valuable platform for information exchange and networking for all representatives from the region's food and agriculture industries. Therefore, all CACCI members are encouraged to take advantage of the Council and the Newsletter as channels to voice their opinions and viewpoints.

My Best Wishes

Ernest Lin  
Director-General  
The Confederation of Asia-Pacific Chambers of Commerce  
and Industry (CACCI)

# Global Food Supply Chains Are Being Overwhelmed

By Richard Wilding and Emel Aktas

Strawberries at Christmas: an image that epitomizes consumer fantasies from the global food supply chain. Hidden behind the haze of food supply “magic” is the reality of increasingly pressured resources relying on global flows of container shipping and air freight. A fraught and sometimes fragile system that brings us Chilean blueberries, Mexican avocados, Argentinian blackberries, sugar snap peas from Zambia and roses from Kenya.



Factory workers process a shipment of fresh strawberries in Alcantarilla, Spain. Photo: Luis Davilla / Getty Images

Food retailers and consumers have become used to a settled landscape, a global network that has kept moving, based on predictable demand and familiarity when it comes to the direction of flows of goods. We’ve become confident that we’ll always find what we’re looking for on the store shelves.

## The Huge Dislocation in Food Supplies

The biggest shock and the biggest lessons for food supply chains have obviously come from the COVID-19 pandemic. The global crisis resulted in a huge dislocation of the system and an ongoing legacy of disruption, displacement and uncertainty. The foundations of that settled picture of supply chains have been moved around or have fallen apart.

During the height of COVID-19, societies around the world were limited by lockdowns in their spending on foods, in restaurants and other food outlets. There was lower demand for foods combined with a decline in availability because of affected logistics and lack of staff. In turn, farms and producers were limiting their operations and cutting back on unnecessary costs. There were even campaigns to encourage people to eat crops that would otherwise go to waste — Belgians were encouraged to eat more fries to tackle the potato mountain.

Now, we’re experiencing the other end of the tsunami as the ocean of renewed demand rolls in, overwhelming the food supply system.

The latest figures for European imports of food suggest increases of more than 130% compared with December 2020. Restaurants have opened up; events are taking place. Freed from distancing restrictions and curfews, people want to be out and spending money to make up for lost time.

Container shipping is out of sync and struggling to cope with renewed demands.

Pre-pandemic, the costs to send goods to China were almost nothing, because otherwise, firms were sending back empty containers, generating bizarre anomalies, such as how it would be cheaper for French mineral water to be sent to China rather than the short hop across the channel to the U.K.

But now, the extraordinary breaks in demand have meant containers are not following conventional flow patterns and not always returned to the locations where most goods have typically been produced. They are like supermarket trolleys scattered

around the extremities of the car park.

We’re seeing spikes in container shipping prices due to renewed demand and messy distribution, particularly for the food sector and its need for specialist temperature-controlled containers.

Container costs between China and North America now average \$17,970, up 1,250%. Prices are also up 850% from China to Northern Europe. Similarly, costs of air freight were kept to a reasonable level because goods were transported along with passengers — people up top, goods below. Costs rocketed while flights were limited, and they continue to be

affected by the slow return to more “normal” levels of travel.

## Climate Change Will Create Further Disruption

Climate change and the more regular occurrence of extreme weather events are going to disrupt this kind of stability, as a matter of course, in terms of ruined crops, water supplies and impact on livestock. A Chatham House report suggests yields of staple food crops will decline by almost a third by 2050. This year (2021), for example, there have been lower yields of coffee beans, meaning higher prices and lower-quality products are coming.

The world’s largest producers of durum wheat, Canadian farmers, saw their usual yields reduced by half this year and pasta prices are expected to rise steeply. More farmers and other producers will be looking to focus their business around where they can find the greatest financial security, shifting to more resilient foodstuffs, meaning some types of produce will become scarce, and some regions will potentially move away from agriculture entirely.

## What Does a Better Food Supply Chain Look Like?

We’re heading from a “pre-new normal” stage into a “new normal,” or what should most constructively be seen as a “new better.”

There are obvious lessons from the demand tsunami that can help members of the food supply chain internationally to focus on resilience and adaptability. The challenge is making the transition and navigating the ways in which the necessary changes to the system will impact everyone, meaning new attitudes and approaches in producers, manufacturers, distributors and consumers.

There will always be a level of reliance on global flows of food products — just in terms of reflecting the reality of where different types of produce can be grown. But there will also need to be more near-shoring, on-shoring and multi-shoring to reduce exposure to risks.

Lower transport costs, smaller carbon footprint, fewer touch points, more control. But just because a country wants to onshore, of course, doesn’t mean it can. There will be difficult issues around infrastructure, skills, labor and know-how, as well

as climate and soils. Where there is strong market demand and investment for localized food production, ingenuity and innovation will follow.

### **Touchless Agriculture Is On the Horizon**

The food sector will need to think cleverly to find ways to minimize waste in logistics, to get more from every food mile. For example in Australia, that might mean a product like wine is transported in large boxes for local bottling. More distributed manufacturing rather than large factories; more 3D printed food. Smarter collaborations between businesses and across sectors to share the best use of logistics operations.

New technologies being trialed mean a “touchless” agriculture from farm to fork — foods planted, monitored and picked via AI and robotics — is on the horizon.

Any radical new model of food supplies has to be based on holistic decision-making. As societies, we can’t keep insisting on, and benefiting from, supply chains structured solely around issues of efficiency and cost. There needs to be attention to the trade-offs between planet and people.

We can easily stop buying roses from Kenya, but that will mean lost jobs and livelihoods. Sustainability in the system doesn’t only mean net zero carbon dioxide, but what is workable in terms of the bigger social context. We can live with fewer food choices, but not without jobs. The poverty created by the collapse of food-related economies is only ever likely to lead to more production and supply disruption as a result of extremism and civil unrest.

### **Building Resilience As Consumers**

For consumers to want to contribute toward sustainability and security, we need to be more resilient as consumers. That means learning to be more realistic about seasonal availability.

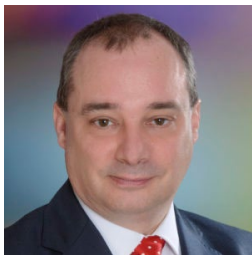
Do we really need strawberries and asparagus at Christmas in the northern hemisphere?

If we do, then we should expect them to come with a heavy price tag to reflect supply chain truths. And we need to become used to having fewer choices, just six types of pasta rather than the usual 20. Fewer exotic, specialized food treats.

The greatest risk to this post-pandemic, climate-conscious world would be for consumers to expect a return to the old normal, to fall back into old habits. The spiral toward more supply chain fragility and supply shocks would only intensify again.

*Brink*

### **About the Authors:**



**Richard Wilding**  
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*Richard Wilding, OBE, is the professor of supply chain strategy at Cranfield School of Management. He is also the chair of the Chartered Institute of Logistics & Transport (UK), and recognised as one of the world’s leading experts in logistics and supply chain management.*

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## **Climate Change is Transforming Farming, Making Your Morning Coffee More Expensive**

*By Michiko Katagami*



*Climate change is having a fundamental impact on coffee farming. Photo: Tim Mossholder*

Coffee growers, and other farmers in Asia and around the world, need to make farming practices climate-smart and environmentally sustainable in order to maintain food supply and rural income.

Have you noticed the price of coffee increasing this year (2021)? You may not feel the pinch yet as many large coffee suppliers are protected with forward contracts that hedge price risks. But there is a long-term trend toward rising coffee prices, partly because of climate change.

According to the International Coffee Organization, international arabica coffee prices have risen over the past consecutive ten months, registering a 51% increase in August 2021 compared to the start of this year’s coffee season. Climate-adverse conditions in major producing countries are to blame for the rising trend, coupled with increasing freight costs and trade disruptions in Asia caused by the COVID-19 lockdown restrictions.

Coffee is grown by more than 25 million farmers in the world, most of whom are smallholders. It is an important industry that generates \$100 billion a year, and a key source of export revenue for many countries. Arabica, the aromatic coffee variety that accounts for 70% of the global coffee trade, grows well only within a narrow band of temperatures, and its suitable growing area is moving up the mountain slopes with climate change.

Farmers in Columbia have already noticed changes in the flowering and fruiting cycles of the coffee plants and damage by pests and crop disease. Scientists warn that climate change will reduce the yield of arabica, and halve the world's areas suitable for growing coffee. Brazil and Viet Nam, the two largest coffee producers, will experience severe losses.



This food system transformation also generates opportunities for us to encourage carbon removal and switch to low-carbon technologies, while increasing food production.

This so-called “climate smart agriculture” approach appears to offer another great opportunity: to address gender inequality in accessing productive resources, business opportunities and skillset development. The transformed climate-resilient food system should

include women at every stage of the process. Coffee is not the only affected crop. Climate change will harshly hit many food crops in Asia. Numerous estimations have warned that staple grains including rice, wheat and corn as well as cash field crops such as sugar cane and cotton are expected to reduce crop yields by 20%-40 % as a crop suitability map is shifting up north.

In addition, unpredictable precipitation patterns, more frequent droughts and floods, and more pests and disease, are expected to further damage the productivity of the existing cropping systems. In Viet Nam, such climate change risks are substantial.

With sea level rise of a meter, rice cultivation in the Mekong Delta may lose up to 40% of the total rice yield. Rising sea levels will inundate most of the Mekong and Red River deltas by 2070, adversely impacting aquaculture. Inundated ponds and lakes could suffer from a complete loss of stock, and climate change will also reduce the variety of aquatic resources and degrade soil quality.

To best adapt to and even benefit from such expected impacts, numerous scientific studies have identified specific measures for farmers in various landscapes. The basic approach of such adaptation measures is to transform farming practices into climate-smart and environmentally sustainable ones to maintain food supply capacity and rural income despite increasing climate risks.

What is appalling is the scale and nature of the crop diversification required to adapt to the climate change risks. Imagine how hard it may be for farmers in Columbia to migrate and move coffee plantation up to higher altitudes within forests, or move onto different cropping and non-farm works to deal with higher temperatures.

How about switching from traditional rice farming to shrimp-rice, shrimp-tilapia or shrimp-mangrove forest farming systems to adopt to severe saltwater intrusion in the Mekong Delta? In Mongolia, herders are asked to practice sustainable grazing rangeland management as collective actions with fellow pasture user group members and reduce the numbers of animals by switching to higher value livestock production in order to survive more frequent droughts in summer and harsh winter storms. These are not marginal adjustments in crop selection or infrastructure designs to withstand expected extreme weathers. Rather, these are system transformations that involve entire value chains and industry players.

Obviously, we need to systemically consider climate resilience building for every aspect of the food value chain. We need to establish incentive mechanisms to encourage millions of farmers to adopt drastic measures to build climate resilience.

To successfully facilitate such farming system transformation and upscale climate smart agriculture investments, governments can play a major role. First, agricultural policies and subsidies can be revisited and reformed to encourage resource use and transaction efficiency in the food system. While many governments heavily subsidize staple grain crops and some industrial crops, their support for diversification into more resource-efficient, climate resilient and higher value farming systems remains limited.

Second, successful diversification into new farming practices needs to be supported on multiple fronts including market access, financing to support the transition, logistics and food distribution infrastructure, and institutional capacity building, so that farmers and food value chain players can make business out of the transformed food system.

Above all, scientific research is indispensable to understand climate change risks, identify countermeasures to address them, and develop investment recommendations to ensure sustainable, climate-resilient, low carbon and inclusive food systems for specific landscapes, institutions, social groups, or countries. We should continue to support good scientific research and be guided by it in best adopting to uncertain future.

*Asian Development Blog*

#### About the Author:



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*Michiko has been working on food security, agriculture and rural development issues with sovereign and non-sovereign investment and research teams for more than 20 years in Asia and the Pacific. She currently works on projects to develop inclusive and resource-efficient agribusiness value chains, support sustainable protein value chain growth, deploy technology solutions for smallholder agriculture, upscale climate smart agriculture and leverage green finance in ADB's developing member countries. Prior to joining ADB she worked for UNDP, Mitsubishi Trust & Banking Co. and S.G. Warburg Securities. She holds a master's degree in development economics from the Institute of Social Studies, the Hague (Nuffic scholar).*

# Repurposing Food Waste: A Circular Economy Approach for the Food System

By Derek Hondo



*Unused food and food waste can be recycled for other purposes. Photo: Joshua Hoehne*

*Transitioning Asia's food system to a circular economy would reduce waste while making communities more sustainable and decreasing the impact on climate change.*

As the population in Asia continues to grow, so too will consumption trends. According to the United Nations, the Asia and Pacific region has a population of 4.6 billion people, accounting for around 60% of the world's population, and it is projected to increase to as much as 5.2 billion people by 2050, according to the United Nations Economic and Social Commission for Asia and the Pacific.

This population growth will continue to have significant impacts on the way goods are manufactured and consumed, as the global “take, make, and dispose” lifestyle has already put enormous stress on raw materials and energy resources.

Our food system remains one of the biggest contributors to climate change, generating significant amounts of solid waste and emitting greenhouse gases in the process. Both food loss (discarded by food suppliers in the value chain, excluding retailers and consumers) and food waste (discarded by retailers or consumers), though occurring at different parts of the food system, are difficult to monitor due to lack of data from many countries, but it is estimated that about 1.3 billion tons of food is lost annually around the world.

In Asia, up to 11 kilograms of food per capita in the region's developing countries and 80 kilograms of food per capita in developed countries is wasted, according to the Food and Agriculture Organization. As the region continues to develop and income levels rise, so too will consumption habits and wastage, especially in rapidly expanding urban centers.

Related issues of near-capacity landfill sites, food insecurity, and environmental degradation further demonstrate the need for an urgent and innovative solution. Transitioning to a circular economy would greatly reduce waste while also addressing several of the Sustainable Development Goals (SDGs): Goal 11 (sustainable cities and communities); Goal 12 (responsible consumption and production); and Goal 13 (climate action).

It is important to realize that food is similar to other products people consume in a linear manner, meaning that there is very little recycling of unused or discarded materials. This

pattern of consumption is immensely taxing on resources and the environment. Governments must recognize that achieving a sustainable economy will require innovation to transition to a circular economy, which, in the context of food usage, seeks to reduce the amount of wastage. Discarded food, for example, does not need to end up in landfills—it can be utilized for other purposes.

The concept of a circular economy can be categorized into three types of activities: creating loops; slowing flows; and narrowing flows. Creating loops and slowing flows are most relevant for reducing food waste.

Creating loops for the food system instead of disposing of discarded food is a type of circular economy that can decrease the strain on agricultural resources. Unused food and food waste can be recycled for other purposes. The agriculture industry, involved at the beginning stages of the food supply chain, can play a vital role in this process through the adoption of agroforestry practices, regenerative methods of farming, and the use of organic fertilizers generated from food waste.

There are also economic opportunities for companies to explore new markets for food waste that would typically end up in landfills. Some examples include utilizing discarded corn cobs, edamame pods, beetroot skins, sugarcane, and potato skins as alternatives to plastic.

The second type of circular economy aims to slow down flows by ensuring that a product is utilized to its full potential before ending up in a landfill or incinerator. For the food system, a circular economy would find alternatives for food waste and, instead of the usual linear consumption model, could allow for food waste to be collected for energy recapture through anaerobic digestion (methane fermentation).

In this process, biogas is produced when bacteria breaks down food waste in a closed environment lacking oxygen. The biogas can then be utilized for generating energy, ultimately decreasing reliance on fossil fuels and reducing greenhouse gas emissions. The byproducts of this process can be further utilized as fertilizer for crops or soil in areas where erosion is an issue.

Current waste management practices, which are based on a linear consumption model, have adverse impacts on the environment as landfills pollute a diverse range of ecosystems and produce greenhouse gas emissions. While solid waste management practices in many cities have yet to prioritize the separation of food waste, a precursor to a circular economy, there are many examples around the world where upgrading waste separation technology and collection has shown to support this transition.

From here, food waste can generate biogas fuel through anaerobic digestion (methane gas fermentation), providing households with clean energy. In a recent report, the Intergovernmental Panel on Climate Change estimated that global food loss and waste contributed 8%–10% of all anthropogenic greenhouse gas emissions between 2010 and 2016.

Moreover, a circular economy for the food system would present additional environmental and economic benefits. Expansion

on a much larger scale could make a significant difference in not only helping cities to better address climate change issues but also creating new jobs and making supply chains more resilient.

It could help to mitigate the high levels of greenhouse gas emissions attributed to consumption patterns and urbanization, especially by reducing the amount of food that goes to waste. With the current agriculture practices and consumption trends of food, for every \$1 spent on food, \$2 is incurred in environmental, health, and economic costs, according to the Ellen MacArthur Foundation. If this issue remains unaddressed, it will continue to impose costly impacts on developing countries.

There are many opportunities for a circular economy in developing countries in Asia. Some already exist in the informal sector. But governments have yet to formally adopt and applied this the food system. Overall, there is a lack of robust legislative frameworks and financing to initiate the transition.

The transition to a circular economy will require governments to finance and promote effective solid waste

management policies and, ultimately, individuals to reject unsustainable linear consumption patterns.

*Asian Development Blog*

#### About the Author:



**Derek Hondo**  
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Derek Hondo joined the Asian Development Bank Institute (ADBI) as a Capacity Building and Training Associate in October 2019. His research interests include climate change, environmental policy, sustainable urban development, investments in infrastructure, and circular economy. He holds an MA in Global Environmental Studies from Sophia University in Tokyo and received his Pre-medicine BSc in biology from Loyola Marymount University in Los Angeles.

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## Fixing food finance to heal the planet

*By Juergen Voegelé*

The performance of the global food system over the last century has been extraordinary. Farmers, processors, traders, retailers and all the other agents in the food system have been able to feed a global population that has increased from 1.6 billion in 1900 to nearly 7.6 billion in 2020, while at the same time bringing down real food prices. Over that period, all four dimensions of food security improved – availability, access, reliability and nutrient adequacy.



*Photo credit: Flore de Preneuf/ World Bank*

That, at least, is what is seen on the surface.

The world's food systems have a market value of around \$10 trillion per year. However, they generate between \$6 trillion and \$12 trillion annually in hidden social, economic and environmental costs. Costs linked to animal extinction, malnutrition, pollution, foodborne illness - and more - will continue to rise under a business-as-usual scenario as we feed a growing global population. The challenge is even bigger considering the risks ranging from effects of climate change to pandemics, linked to ecosystem degradation, unhealthy and unsafe diets, and increasing urban density.

The UN Food Systems Summit represents a critical moment to promote and scale initiatives and solutions that can transform food systems to benefit the world. Food systems must change rapidly and fundamentally to become more regenerative, resilient, and inclusive, while increasing food supply for an additional two billion people by 2050.

Reforming how we produce, transport, process, trade, invest in, regulate, and consume food can help tackle the most critical challenges of our generation.

Many of the technical solutions are well known. Researchers at CGIAR and elsewhere have perfected methods to

reduce methane from rice and livestock and store more carbon in the soil by better managing cropland and grassland. Integrating trees and shrubs on farms can provide organic fertilizer and feed, reducing the need for chemical inputs, while increasing yields, providing habitats for beneficial insects and sequestering carbon. And investments in improved roads, cold storage and the circular

economy offer promising pathways to reduce food loss and waste.

But how we finance food systems – from both public and private sources of capital – may be the ultimate game changer since financing is both a driver of food system inefficiencies and an essential ingredient to their transformation.

As part of the UN Summit, the World Bank has collaborated with the International Food Policy Research Institute, and the Food and Land Use Coalition, to rethink the way food systems are financed. Together we identified five “food finance imperatives” which could unlock \$4.5 trillion in new business opportunities every year. By laying out a roadmap of potential solutions and directing them at specific actors in the financial system, our hope is that these imperatives will help accelerate critical shifts for people and planet.

Transforming food finance will require a systemic approach, including repurposing public policies and support for agriculture and food to tackle health and climate challenges. According to the World Bank's analysis of public support in 79 countries, governments spend about \$570 billion each year supporting food production – mainly in the form of price support, input subsidies and direct payments to producers. While some of this money goes to research and development, food safety, and environmental programs, it is a small fraction and there is scope

to be much more deliberate in the targeting of public spending to achieve development goals. The World Bank has a growing track record in this area, and we look forward to helping more countries where there is demand for change.

The private sector also has a large role to play to mitigate environmental and social risks. For example, banks can redirect investment toward more sustainable businesses, while large food companies can invest in the natural assets – healthy soil, water, pollinators, shade - needed to continue food production and work to eliminate deforestation in their supply chains. All told, changing the food finance architecture could help redirect some \$2 trillion in private capital toward healthier outcomes.

One way forward could be to put in place a Global Food Finance Compact between governments and the private sector under which public financing would help “de-risk” private sector investments that meet higher social and environmental standards and support healthier, more inclusive and more climate-resilient outcomes.

Getting the financing of food systems right represents a huge prize. Doing so not only would help generate trillions in new investment opportunities but also significantly reduce the burden of diseases caused by malnutrition. New patterns of food financing would help limit global warming to less than 1.5°C by reversing the deforestation and degradation of carbon-rich ecosystems. And by directly confronting the drivers of poverty and hunger, better food financing would help build the resilience of families and countries to adverse shocks.

The potential for positive change is so large, we can no longer ignore food financing in our journey towards green, resilient and inclusive development.

*World Bank Blogs*

#### About the Author:



**Juergen Voegele**  
Vice President for Sustainable Development at the World Bank

*Juergen Voegele, Ph.D., assumed the position of Vice President for Sustainable Development at the World Bank on April 1, 2020. In this role, he oversees the work of Global Practices and thematic groups that*

*bring together the best expertise from across the World Bank Group and from partners, to help countries tackle their most complex challenges in the area of sustainable development. The practices and groups under his responsibility include Agriculture and Food; Climate Change; Environment, Natural Resources and Blue Economy; Environmental and Social Framework Implementation; Social Development; Urban, Disaster Risk Management, Resilience and Land; and Water.*

*Prior to this appointment, Dr. Voegele was Global Director of the World Bank's Climate Change Group and Senior Director of the World Bank's Agriculture and Food Global Practice. Dr. Voegele is chair of the CGIAR System Council Board, which oversees agricultural research programs tackling poverty, food and nutrition security, and improved natural resource management around the world. Since 2016, Dr. Voegele has served as co-chair of the Global Future Councils of the World Economic Forum. He has also been a member of the EAT Foundation Advisory Board*

*since May 2017.*

*Since joining the World Bank in 1991, Dr. Voegele has held several assignments, chairing the Agriculture and Rural Development Sector Board as well as the Environment Sector Board, leading the Agriculture Unit in China, the Agriculture and Rural Development Unit of the Europe and Central Asia Region, and the Agriculture and Rural Development Department of the World Bank (later recast as the Agriculture and Environmental Services Department).*

*Dr. Voegele holds a PhD in Agriculture Engineering and a Master's in Agriculture Economics from the University of Hohenheim, in Germany.*

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## Farmers learn climate adaptation in 'open sky' schools in India

*By Ranjan Samantaray*



*The state of Maharashtra in India is home to over 15 million farmers, but climate change has impacted agriculture productivity in several drought prone districts of the state.*



*A class in progress in village Bhuising in district Buldhana.*

In the drought prone district of Marathwada, a group of farmers eagerly inspect small plots of land where pulses, fruits and vegetables are being cultivated. The curious farmers ask several questions to the landowners – how did they select which crop to grow, what fertilizer did they use, and most importantly how did they irrigate their fields? The monsoons had been weak, and water was not available in abundance. The farmers are eager to learn and the landowners are keen to share their experience.

Several such small plots of cultivated land, serving as demonstration plots, have been created by farmers on their land in the state of Maharashtra. These have become informal ‘open-sky’ schools and serve as a learning ground for small and marginal farmers. They learn about recent advances in science, hydrology and crop productivity, and most importantly, learn how to adopt appropriate agricultural practices to help better adapt to climate change.

The state of Maharashtra in India is home to over 15



*Vimal Rajabhu Yadav with her husband Rajabhau Yadav in their plantation.*

million farmers and has over 50% cultivable land, but climate change has impacted agriculture productivity in several drought prone districts of the state. To mitigate the adverse impacts of climate change in these drought prone districts, a \$600 million Maharashtra Project on Climate Resilient Agriculture (PoCRA) supported by the World Bank was launched. The core objective of the project is to encourage farmers to adopt climate resilient agriculture practices and improve agribusiness opportunities and to help small and marginal farmers increase their income in a sustainable manner.

### **Schools without classrooms**

A significant and critical aspect of the project are the demonstration plots created by farmers which serve as ‘open sky’ schools. Here, the farmers learn how to prepare the right soil, make the right choice of crop, use low-cost organic agricultural practices, and water-conservation techniques. In addition, information on water availability is provided by a mobile app created by the Indian Institute of Technology, Mumbai, a well-known technology institution of the country.

The app uses real-time data on weather forecasting and provides farmers with information on the status of surface and groundwater in the village, and the actual water demand and availability during the cropping season. With this knowledge in hand and with the training in moisture-conserving and water harvesting practices learnt from the open-sky classrooms, the farmers prepare micro-plans for their crop keeping in mind to balance village-level water demand and supply.

These micro-plans are then submitted to the Village Climate Resilient Management Committee, which has been constituted under the project to approve and oversee plans drawn by beneficiary households. The micro-plans are put through a multi-stage process for implementation, and project funds are transferred directly into the beneficiaries’ bank account. These

well-integrated timely fund transfer mechanisms have helped small farmers to reap both short and long-term benefits of the project.

Rajabhau Yadav and his wife Vimal Rajabhu Yadav are horticulture farmers in Ekruga village in Osmanabad, a drought prone district in Maharashtra. Based on the training received from the open sky school, they prepared a micro-plan for a short-duration guava plantation on their half hectare patch of land. They received a monetary assistance of Rs. 73,000 under the project. Using climate-smart practices, their very first harvest itself fetched them Rs. 65,000.

Under the project, there are 4000 such “open sky schools” currently in session, with this ingenious approach to farmer training. Soon, these are expected to spread to around 6,000 villages in the state.

The Maharashtra project has also created a feedback mechanism for research and extension agencies to respond to new and emerging climate risk challenges posed by farmers through an Integrated Computer Technology platform and mobile network. Initial results from different crops indicate that this application of technology in designing climate-smart agronomic practices has led to a decrease of about 20 percent in input costs and an increase of about 30 percent in farm incomes. This suggests that bottom-up knowledge enhancement approach whilst generating demand for inputs and services is also giving dividends to smallholders in drought affected districts of Maharashtra.

This ground-breaking project in India, has demonstrated that addressing the critical knowledge gaps among small farmland holders can significantly improve productivity, farmer prosperity, and environmental sustainability, all at the same time.

*World Bank Blogs*

### **About the Author:**



#### **Ranjan Samantaray Senior Agriculture Specialist**

*Ranjan Samantaray is currently a Senior Agriculture Specialist with the Agriculture and Food Global Practice at the World Bank’s New Delhi Office. He currently works in areas like climate smart agriculture, agribusiness strategy, digital transformation in agri-food systems for rural transformation. Prior to joining the World Bank, he worked with many bilateral and multi-lateral development agencies and has several publications on agriculture and allied sectors. He holds a master’s degree in agriculture science from Bangor University of Wales with specialization in Hydrology.*

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## **EU satellite images improve Taiwan crop yield data**

*By Yang Yuan-ting and Jake Chung*

The Taiwan Agricultural Research Institute said it can now make in-season predictions of harvest yields for rice crops based on satellite imaging technology, and is working on ways to apply the science to

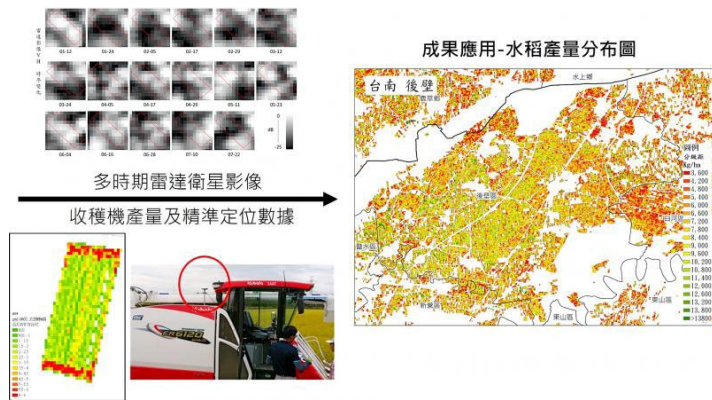
other types of crops such as cabbage and lettuce.

The traditional methods of estimating rice yields are conducted by measuring randomly selected patches of

rice, the institute said on October 7, 2021.

The methods calculate yields by township to estimate a nationwide yield, requiring significant amounts of time and resources, it said, adding that such





Images show the latest satellite imaging technology used for predicting the harvest yield of rice crops. Photo courtesy of the Taiwan Agricultural Research Institute

methods only provide yield estimates for the previous year.

Climate change and its effects — evidenced by recent water shortages that forced Taiwan to temporarily cease irrigating fields — has demonstrated that the country can no longer rely on previous methods to estimate crop yields, the institute said.

The new analytical methods allow the institute to calculate yields from more

than 120,000 hectares of rice paddies across western Taiwan in less than two months, it said, adding that the method is capable of calculating individual yields per paddy.

Institute member Liu Tsang-shen said free satellite images released by the EU each week are utilized to make such calculations, adding that the institute is also consulting crop yield data from previous years.

The average growth cycle of a

rice crop is about five months from seeding to harvest, and the institute is usually able to estimate the expected yield in the third month, Liu said.

Other algorithms are introduced to factor in the possible loss of crops from pest damage, he added.

The institute is looking to use this method of yield calculation on other crop types, such as lettuce, cabbage, sorghum and corn, he said.

Such analysis from satellite images could be applied to other industries, the institute said.

The system could also be used to develop precision agriculture, such as helping farmers manage different crops, the amount of water the crops need and what kind of fertilizer should be used, along with other suggestions, it said.

The system could also provide important data that could be used by the government to ensure the production of sufficient food crops, allocation of water and management of agricultural ecological systems, it added.

Taipei Times

## DA, partner push urban farm school to modernize Philippine agriculture

By Christine Cudis

The Philippine Department of Agriculture (DA) has intensified its campaign to promote urban agriculture through the help of private sector despite challenges brought about by the coronavirus disease 2019 (Covid-19) pandemic.

During his visit to an urban farm in Novaliches, Quezon City, Agriculture Secretary William Dar said incorporating modern technology in agriculture will bear great results.

“Technology-based agriculture is the platform, and agripreneurship is a key strategy to modernize the country’s agriculture sector and contribute to its growth,” he said on October 6, 2021.

He also said greater engagement with the private sector is necessary to invest in agriculture.

Accompanied by other DA officials, Dar visited Growtech Farms owned by Agrosheeriff client Martin Escalona of Simplicity Solutions real estate.

Dar said the Growtech Farms greenhouse is the pilot urban farm project of Agrosheeriff in the country.

The facility, which is intended for growing strawberries, lettuce, and other vegetables, features Israeli agricultural equipment



URBAN FARMING. Agriculture Secretary William Dar visits the Growtech farms in Novaliches on Oct. 10, 2021. Photo courtesy of DA Comms Group

and technologies including hydroponics and irrigation fertilizer systems.

The DA, through its new banner program, National Urban and Peri-urban Agriculture Program (NUPAP), seeks to address the challenges brought about by the pandemic to Filipino families especially in Metro Manila and other urban areas nationwide.

Escalona, through Growtech Farms, expressed his plans to offer farming classes.

DA’s Agricultural Training Institute Director Rosana Mula said her office can assist Escalona with the establishment of an urban

farm school.

Meanwhile, Agrosheeriff Business Development Manager Roman Kataev explained that among Agrosheeriff’s long-term goals are to ensure food security in the Philippines, improve the quality of fruits and vegetables, reduce imports, increase high-tech jobs, and increase the interest of young people to work in agriculture.

The private group offers open field irrigation systems, custom-built greenhouses, optimized hydroponics and fertigators, and watering system kits and equipment, among other services.

Philippine News Agency

# Turkey vows to play lead role in implementing green revolution

By Anadolu Agency

Turkey will assume a leading role in carrying out the Green Development Revolution, the country's Agriculture and Forestry Minister Bekir Pakdemirli said on October 19, 2021.

"In terms of developing sustainable agricultural practices and combating climate change, within the scope of the 'Green Deal,' we started our work on the food system," he said at the 7th Sustainable Food Summit and World Food Day Meeting in Ankara.

Noting that agriculture and food are the leading sectors that will be most affected by climate change, Pakdemirli said a 10-25% decrease in agricultural yield is estimated until 2050 due to the effects of climate change.

Pointing out that Turkey is a signatory to the Paris Climate Agreement, the minister said, "We care about raising a wider awareness of climate change, with attaching importance to increasing soil fertility."

He stated that as a result of the support and training activities provided by the government, the areas for good agricultural production increased by 42 times and organic agricultural production 2.5 fold over the last 10 years.

Many projects are continuing to develop, expanding good



Activists attend the Global Climate Strike in Istanbul, Turkey, Sept. 24, 2021. (Reuters Photo)

agricultural practices and organic farming activities, he said and added, "90% of food is produced directly or indirectly from the soil."

Noting that it is necessary to use soil and water resources effectively in agricultural activities without polluting them, he said: "Our efforts to efficiently utilize animal and agricultural wastes in the field of energy with modern biomass methods are increasing. Again, we conduct monitoring studies at 4,836 stations in order to detect agricultural-based pollution and identify nitrate-sensitive areas."

In order to protect agricultural lands and plan appropriately, the minister said the characteristics of these soils should be known and their quality should be determined.

For this purpose, the "National Project for the Establishment and Mapping of the Soil Database of Turkish Agricultural Soils" was carried out on 50,000 soil samples.

The European Union considers climate change and environmental degradation a great threat to Europe and the world.

To overcome these challenges, it hopes to develop a new growth strategy that will transform the union's economy into a sustainable one.

The EU aims to achieve climate neutrality by 2050.

Daily Sabah

## World's first Wine Blockchain Consortium established in Georgia



Georgian President Salome Zurbishvili said that Georgia as the homeland of wine, really deserves to be one of the first countries in the world to introduce technological innovations in the development of the wine industry. Photo: President's press office.

The world's first Wine Blockchain Consortium has been established in Georgia through a partnership between the Georgian National Wine Agency and Norway-based blockchain trading platform WiV Technology.

Georgian President Salome Zurbishvili who on September 29, 2021 attended the consortium establishing ceremony said that Georgia as the homeland of wine, really deserves to be one of the first countries in the world to introduce technological innovations in the development of the wine industry.

"Most importantly, this innovative technology will help verify the quality of wine, increase its sales and marketing efficiency, attract additional capital and finance for wineries, simplify export procedures and improve the quality and price of Georgian wine", Zurbishvili said.

She said that the consortium will especially support female winemakers in the country with special programmes and training courses.

Agenda.ge

# Vietnamese Innovation in agriculture against COVID-19

By Thanh Thao



The pandemic has forced Vietnam’s agricultural sector to upgrade. Cooperatives have adopted new strategies to guarantee a stable income for farmers even during the fourth wave.

In Vietnam the fourth wave of COVID-19 has affected the agricultural sector and the production of tropical fruits, but at the same time, it has stimulated innovation.

Traditionally, agricultural products are consumed on a seasonal basis because of limited refrigeration capacity. Nevertheless, to avoid waste caused by the coronavirus, farmers have adopted new strategies to sell their products locally and internationally.

In An Nhon, a town in Đồng Tháp province, agricultural cooperatives have obtained more than a thousand hectares of land to cultivate longan (a typical tropical fruit) for export.

The Islands of Bạch Viên and An Hòa export almost 32,000 tonnes of fruit per year, but “even with the epidemic, the

longan was sold at a high price”, explained Lê Văn Hùng, director of an agricultural cooperative in An Hòa, “because we met all production standards and obtained several certifications.”

Cao Lãnh district has dedicated 40 per cent of its territory to mango and other products, part of a pilot project for the reorganisation of local agricultural production.

Võ Việt Hùng, director of the Mè Xèng Mango cooperative, told AsiaNews how they started selling mango online.

“In order to sell goods online, the cooperative set up its website to bring information about mango trees to customers.”

It is “thanks to the transparency in production and the quality of mangoes that we have managed to guarantee a stable income for farmers” even during the pandemic.

In Long An province however, climate change had negatively impacted pitaya (dragon fruit) production even before COVID-19. Many cooperatives have been forced to sell the products at reduced prices due to oversupply.

Some farmers in Châu Thành district did manage to sell at normal prices thanks to high production standards. The use of pesticides and fertilisers is controlled and cooperatives keep a register to trace products’ place of origin.

In the province residents want the government to do more to connect locals with each other and create a stable and sustainable production chain.

AsiaNews

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## Australian vegetable farmers are preparing for a future with fewer workers

By Hugh Hogan and Lachlan Bennett



*Ed Fagan’s asparagus crop will not be picked for the second year running because of a lack of workers. (ABC News: Hugh Hogan)*

The asparagus at Mulyan Farms outside of Cowra in central west New South Wales is bursting out of the ground, but for the second year in a row there are no workers to harvest it.

The business, established in 1886 and now owned by Ed Fagan, has always relied on some form of “migrant labour” but travel restrictions and border closures

have meant the usual workforce was unavailable.

“Trying to grow a crop that costs a lot to harvest but has a really high end value ... [while] you’re reliant on insecure labour — it’s a very risky business,” Mr Fagan said.

He said the labour situation in agriculture had been getting harder to



*Asparagus is a perennial crop that requires lots of workers picking every day for weeks when it starts to sprout. (ABC Rural: Hugh Hogan)*



*Tim Groom says Charlton Farm has invested in automating processes in the onion packing shed. (ABC Rural: Lachlan Bennett)*



*The process of grading onions is proving difficult to automate according to Tim Groom. (ABC Rural: Lachlan Bennett)*

navigate for years, but the pandemic was a “nail in the coffin” for many labour-intensive crops on his farm.

The operation had stopped growing crops like baby spinach, iceberg lettuce and brassica crops and was now focused on what could be mechanically harvested, like beetroot and popcorn.

“But [popcorn] is non-existent this year because of a lack of sales due to cinemas being closed.

“Anything that’s mechanical for us is worth looking at but anything that’s got a high labour content has to be seriously special for us to consider it.”

Mr Fagan said they were also trying to develop ways to mechanically harvest crops like asparagus that traditionally needed to be hand-cut.

### Automation in packing

In northern Tasmania, Charlton Farm produces, sorts and packs around 10,000 tonnes of onions every year for domestic and international markets.

Director Tim Groom said the company had invested in automated bagging equipment a few years back.

“It’s all automatic now; a bale of bags has to be placed on the bagger and the rest of it is just a matter of supervising the machine,” he said.

It was an expensive upgrade, but it has replaced several workers in the shed.

It was also a timely investment, as Mr Groom said COVID had accelerated the ongoing trend of reduced availability

of workers.

“It’s accelerated the need to look at ways of automating processes,” Mr Groom said.

Both Mr Fagan and Mr Groom believe the labour shortage will be around for a long time, even after borders are opened.

“I can’t see it [labour shortages] going away quickly ... It’s going to hang around for quite a few years to come,” Mr Groom said.

‘Acute’ shortage driving innovation

Simon Drum is the managing director of PSVC Advisory, a company focused on agribusiness solutions.

He says the labour situation in agriculture is as bad as it has ever been without working holiday makers or backpackers.

Mr Drum noted workers from the Pacific Islands had still managed to access Australia during the pandemic, but quarantine costs have made the process “exceptionally” expensive.

“The numbers of Pacific Islanders working on Australian farms is higher than it’s ever been but hasn’t fully accounted for the drop in working holiday makers,” he said.

“Right now, the shortage of labour for agriculture is as acute as it has been.”

Mr Drum said the shortage was driving innovation across the industry as farmers have adapted their businesses to function with fewer workers.

“There’s lots of talk about automation but that never happens overnight,” he said.

ABC News

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## Regenerative agriculture: NZ farmers well placed to benefit - report

By Maja Burry

A new industry report has found there’s opportunities for New Zealand’s farmers to take advantage of the global regenerative agriculture trend, but there isn’t a clear definition and understanding of what the practice is.

The primary sector groups Beef + Lamb New Zealand and New Zealand Winegrowers commissioned the research

with some funding support from the Ministry for Primary Industries Sustainable Food and Fibre Futures Fund.

It focused on the current state and future market potential of regeneratively produced food and wine within three of New Zealand’s international markets - the US, Germany and the UK.

Report co-author Mike Lee, from

the US-based food innovation agency Alpha Foods, said while there was no single definition of what regenerative agriculture was globally - most agreed at its core it was about improving the health of the land, plants, animals and people.

Lee said developing a set of principles at the national level could give the New Zealand’s farmers an edge as the

demand and market grows for regenerative products.

He said when his team spoke to some New Zealanders as part of its report, it found there were some misconceptions about how well-established regenerative agriculture was.

“There was this kind of almost assumption that ... regenerative agriculture is the thing that’s been already happening and well established and it was sort of New Zealand’s job to learn what everyone was doing and kind of adopt that and jump on the bandwagon. I don’t think that’s as much the case.”

Beef + Lamb NZ market development manager Nick Beeby said New Zealand’s pasture-based farming systems meant it was better placed than some other countries to meet regenerative agriculture principles.

“This isn’t to say all farms are applying all regenerative agriculture principles all the time... [but] our farming systems are so different from conventional agriculture such as in North America with their feedlot-raised beef and sheep meat.”

“What this all means is there could be a significant opportunity for New Zealand sheep and beef farmers and wine growers to capture this value in the marketplace.”

Beeb said Beef + Lamb would work with farmers and



(File photo) Photo: 123RF

other industry partners to develop a firm plan on how the red meat sector could capture this potential value for New Zealand.

Julia Jones heads analytics for NZX and previously was a farm enterprise specialist at KPMG. She said regenerative agriculture could be an emotive topic for farmers, but it presented opportunities that should not be ignored.

“This is not about one thing, it’s not about those five principles of soil, it’s actually a holistic mindset ... so we need

to be really careful that we don’t get so emotional and feel judged by it, that we actually miss all the opportunities of it,” she said.

Julia Jones said in the past the farming sector, as well as other industries, had been too slow to move on marketing opportunities or had oversold things which did not matter to consumers.

“You’ll see lots of [marketing] things where there’s just scenery, well, every country has scenery.”

“Grass fed is a really good example... we’ve missed quite a big opportunity as a country. You know, we’ve only just started putting ‘grass fed’ on labels a couple of years ago.”

*Radio New Zealand*

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## Nepalese Farmers encouraged to grow basmati rice commercially

By Sangam Prasain and Basanta Pratap Singh

*The indigenous aromatic rice is not grown on a large scale, and Nepal has been importing it from India.*

The government has been persuading farmers in far western Nepal to grow Hansaraj basmati rice commercially because of its export potential. The indigenous aromatic rice is not grown on a large scale despite swelling demand, and Nepal has been importing it from India to satisfy the palates of urban consumers with growing incomes.

The Agriculture Knowledge Centre, formerly known as the District Agriculture Office, has launched a special project to encourage paddy farmers to grow the fragrant grain commercially from this fiscal year which began mid-July.

Demand for aromatic rice has jumped manifold among Nepalis who have become more discerning along with higher earnings, particularly in large cities like Kathmandu and Pokhara.

Long grain basmati rice holds a unique charm in global markets including Nepal, and this has resulted in a growth in rice imports although the country produces surplus grain which is of improved variety, agro experts said.

According to Nepal Rastra Bank, the country imported rice worth Rs50.48 billion in the last fiscal year, up a whopping



*Farmers and an agro technician visit a field planted with Hansaraj basmati rice variety in Bajhang. POST PHOTO: BASANTA PRATAP SINGH*

51.4 percent year on year. Basmati rice accounted for most of the shipments, insiders said.

“As per the project, the Agriculture Knowledge Centre will help farmers in packaging, bagging, labelling and marketing the rice,” said Tek Bahadur Bista, chief of the centre. “It is unfortunate that Nepal has for a long time failed to market such rich rice.”

He added that achieving success in marketing the rice variety would consequentially lead to huge demand. “In the first year, the Agriculture Knowledge Centre will support farmers to market their products by launching various schemes,” said Bista.

The centre plans to package the rice harvested in November and sell it in urban areas like Mahendranagar, Dhangadhi and Kathmandu in the first phase.

The government has started to realise the potential of indigenous and exportable rice after India applied for a geographical indication (GI) tag to basmati rice in the European Union (EU) in July 2018. Nepal submitted an opposition letter along with proof of origin, diversity, cultivation and use values of basmati rice on December 9, 2020.

GI is intellectual property rights that have a specific

geographical origin and possess qualities or a reputation that are due to that origin.

Basmati is long grain aromatic rice grown for many centuries in a specific geographical area, mostly in the Himalayan foothills of the Indian subcontinent.

This rice has extra-long slender grains with a soft and fluffy texture upon cooking, delicious taste, superior aroma and distinct flavour.

According to a journal entitled Intellectual Property Right on Basmati Rice: Current Scenario and Evidence of Origin, Diversity, Cultivation and Use Values of Basmati Rice in Nepal, authored by nine researchers and published in July, many countries have been attempting to get intellectual property rights, mainly geographical indication tag, on basmati rice because of its high market value at the global level.

The journal said that a total of 133 basmati type rice landraces are grown in 60 districts of Nepal. Basmati rice has been traditionally grown and sold and consumed in geographically localised areas of Nepal since ancient times.

International and national scientists have defined the lower altitudes of Nepal as one of the centres of origin of basmati rice.

Many Nepali basmati rice landraces have been characterised and evaluated using morphological traits, isozymes and DNA markers. Four basmati types of rice landraces have been registered at the National Seed Board. They are Pokhrelti Jetho Budho rice registered in 2006, Lalka basmati registered in 2010, and Suddhodhan Kalanamak and Kalonuniya, both registered in 2020.

The journal said that many community seed banks maintained different types of basmati rice landraces. The National Agriculture Genetic Resources Centre and international genebanks have collected more than 80 basmati landraces and conserved 68. Basmati rice landraces have geo-linked traits.

The historical culture of production, consumption and marketing of native basmati rice in Nepal should always be favoured by both national and international rules and regulations, according to the journal.

Nepal has ample and valid evidence to get geographical indication right on basmati rice, the journal said.

As a pilot project, the government has started to grow the rice commercially to stem imports and reduce the trade deficit, according to experts.

Hansaraj is grown in Bajhang, Baitadi, Darchula, Dadeldhura, Jhapa, Kanchanpur, Morang, Palpa, Pyuthan, Salyan, Sunsari, Surkhet and Syangja. The aromatic rice is grown at altitudes ranging from 60 to 1,100 metres.

Farmers in Bajhang have expanded their paddy acreage this year after receiving assurances from the centre. They have transplanted Hansaraj basmati on 2,000 hectares out of the 7,500 hectares under paddy cultivation in 2021.

“Following the centre’s assurance, farmers who had almost abandoned cultivating Hansaraj basmati have transplanted this variety,” said Paru Rokaya, a farmer in Thalara, Pkhet. Thalara is the key Hansaraj basmati producing area in the district.

“If we get markets and good prices in 2021, we have decided to transplant this variety on all the available land in 2022,” she said. The district produces 22,000 tonnes of paddy annually.

“Most indigenous paddy varieties like Hansaraj basmati are heading towards extinction as farmers have been using improved varieties of seeds to get higher productivity,” said Ram Prasad Joshi, president of the Federation of District Farmers Group. “Due to high pest infection and low productivity, farmers give indigenous varieties the lowest priority.”

*The Kathmandu Post*

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## Diversifying agriculture in Bangladesh - a call of the time



*File photo used for representational purpose. (Collected)*

Despite the commendable growth of agricultural produce in the country-- almost to the extent of self-sufficiency, food security continues to claim the top priority to not only ensure food for all but also to sustain the growth as well as pursue progress in many socio-economic spheres. The main concerns of agricultural economists and policymakers at this time are poverty reduction, farmers’ income and welfare increase, fairness improvement and sustainable development in the global food value chain. The concerns spare no scope for laxity, as it is a continuously engaging process to have all stakeholders alert, and for all the time.

It is heartening to note that severe or moderate food insecurity in Bangladesh gradually reduced 14.5 per cent during September-October of 2021 from 45.6 per cent of June 2020, according to available data. However, contrary to public perception, food security is not just about growing enough staple to mitigate hunger, but as well to sufficiently increase production of all varieties of food-- from staple to vegetables to spices. It is here that the need, albeit urgency of diversifying agriculture comes up as a whole package to fulfilling the pre-requisites of food security.

This aspect was strongly highlighted at a webinar held last week where speakers emphasised diversification of agricultural production through disbursing more farm credit, promoting contract farming and investing in research to increase the productivity of rice, non-rice crops, livestock, and fisheries. They also suggested engaging the private sector for developing agricultural value chains, policy intervention for producing high-value and high-nutritive foods and enhancing crop intensity against the backdrop of decreasing arable lands. No doubt, such inclusive approach to improve the food systems can also help achieve all related targets of the SDGs in a comprehensive manner. The webinar titled ‘Mobilising Action for Food System

Transformation in Bangladesh' was jointly organised by the Economic Development Research Organisation (EDRO), the Financial Express, and the Daily Banik Barta. Speaking on the occasion, State Minister for Planning stressed the need for research to formulate evidence-based policies for further development of the country's agriculture. Terming allocation of 0.6 per cent of the GDP for research and innovation very low, he said the allocation for research in the country should be at least 1.0 per cent of the GDP. Speakers at the webinar mentioned that although rice is the main staple in the country, and 64 per cent of the calorie intake of the people comes from rice, it is not a very good source of protein

and other minerals, and hence there is a need to diversify the dietary practice of the people. Of the total farmers in the country, over 54.5 per cent grow rice, which shows that the country's agricultural production diversification needs to go a long way.

The country's agriculture scientists are well aware of the need for crop diversification and raising crop intensity as well as the increasing necessity of growing more horticulture and vegetable produce by following evidence-based findings from research. The relevant authorities may consider a medium- to long-term plan on how to go about achieving these goals, with facilitating services from the government.

*The Financial Express*

## Government to update list of Japan's finest terraced rice paddies



*Yomiuri Shimbun file photo*

*The Maruyama Senmaida rice paddies are seen in the Maruyama district of Kumano, Mie Prefecture, in September 2020.*

*The Yomiuri Shimbun*

The government plans to update its list of the 100 finest tanada, or terraced rice paddies, in Japan, in a bid to preserve traditional landscapes.

Tanada are mostly found in mountainous areas. The current list was created 22 years ago to help protect them, but some of the 134 locations it contains have since fallen into bad condition.

As part of the selection process, the Agriculture, Forestry and Fisheries Ministry will require agricultural cooperatives and tourism companies to participate in the maintenance and management of tanada. It will also establish a new program calling for private companies to become supporters of the new list.

The current lineup was selected in July 1999 from 117 municipalities, based on discussions at a ministry's experts panel. It includes the Maruyama Senmaida (1,000 tanada) in the

Maruyama district in Kumano, Mie Prefecture, one of the largest in Japan.

The long-term maintenance and conservation of these tanada was encouraged for the purpose of landscape preservation and the passing on of Japan's farming culture. However, they involve a great deal of manual labor, as large agricultural machinery cannot be used in tanada. Japan's farmers are also increasingly elderly, and tanada in some areas have been abandoned.

In addition to farmers' participation, the new requirements for selection will include the involvement of local governments, agricultural cooperatives, and private companies in the field of tourism and commerce, to ensure that tanada continue to be preserved.

Evaluations will also take into account whether there is any brand-name rice production or regional development plans centered on tanada.

The ministry said it would hold the first meeting of the selection committee for the new list in October to finalize the relevant procedures. It will then ask municipalities to recommend tanada in their areas before choosing the best by the end of this fiscal year ending March 2022.

The ministry also plans to change the list's title from the existing "100 best tanada in Japan."

In the new program involving private companies, the ministry will ask them to publicize tanada in their areas on their corporate websites and social media, and to promote tanada in various events and in-house training as part of their contribution to the region.

In 2019, the Diet passed a law to promote tanada, which provides financial and personnel support from the government. A total of 676 areas in 39 prefectures have been designated under the law, and tanada in these areas are expected to be among the candidates for the new list.

*The Japan News*

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