



## Huge pile of toxic pesticide DDT cleared after nearly four decades

FAO has led a complex international operation to remove more than 500 tonnes of the now banned pesticide dichlorodiphenyltrichloroethane (DDT) from Bangladesh. The legacy stockpile, thought to be largest in the world at a single site, was removed from a government compound in the centre of Chattogram, Bangladesh's second largest city. It was imported 37 years ago to manage malaria but was never used. It is set to be incinerated soon at specialist facilities in France after being shipped through the territorial waters of 13 other counties.

FAO supported the Government of Bangladesh to dispose of the DDT safely and to clean up the storage site. To mark the completion of the operation, a closing event was held in Chattogram. Guests attended from a number of government ministries and departments which were involved in the operation.

Removal of DDT is highly technical and bound by international laws, rules and regulations. FAO technical expert Mark Davis, who spearheaded the operation, described the stockpile as 'highly unusual'. "This is the largest amount of the pesticide removed from a single location that I'm aware of. It's also highly unusual in that it was stored in the middle of a city and because it was there for so long."

Since DDT does not break down, the consignment had exactly the same concentration of active ingredient today as it did when it was manufactured. DDT is toxic to humans and other organisms. As a persistent organic pollutant

(POP), it accumulates in the bodies of humans and animals, as well as the wider environment. Due to the urban location, special precautions were taken to ensure that the removal operation did not create dust.

Under the supervision of FAO experts and Government officials, a specialist company based in Greece took four months to complete the repacking at the site, with the help of local workers. The DDT was loaded into United Nations-approved chemical containers for shipment.

The work was undertaken by FAO's Pesticide Risk Reduction in Bangladesh project, funded by the Global Environment Facility (GEF) and co-financed by the Government of Bangladesh and FAO. FAO designed the operation as part of an overall mission to remove all obsolete pesticides from Bangladesh. Externally-funded disposal operations of this nature are unlikely to be repeated and it is important that national capacity is developed to deal with hazardous waste from all sectors. Saso Martinov, who leads the project, said: "This operation was the first of its kind in Bangladesh and a major achievement."

### HIGHLIGHTS

- Successful removal of legacy DDT from city centre.
- Bangladesh becomes the first country to launch FAO's 'One Country One Priority Product'.
- Celebrations for World Soil Day and International Year of Artisanal Fisheries and Aquaculture.
- Nutrition security training workshops.
- Mini-truck donation to support aggregation centres and landslide response in Cox's Bazar.

## Humble jackfruit ripe for export



Jackfruit is in global demand as an increasingly popular alternative to meat.

An inception workshop was held at the Bangladesh Agricultural Research Council (BARC) for a new project that will support small-scale farmers and entrepreneurs to benefit from the country's national fruit. Nutritious jackfruit is one of the most important and widely grown fruits in the country but its potential has been largely unexploited. The project, which will be implemented by FAO, is dedicated to its promotion, production, and marketing.

FAO Representative in Bangladesh Robert D. Simpson said: "Jackfruit has great potential, as recognized by the Government and FAO, and this project is about exploiting that potential. Bangladesh can undoubtedly gain a significant share of the international market for a variety of jackfruit-processed products that are in high demand globally."

In terms of annual production, jackfruit is the second largest fruit in the country after mango, accounting for more than one-fifth of total fruit production. It contributes significantly to the nutrition of the people of Bangladesh as a source of vitamins, minerals, and calories. Despite these nutritional benefits and largely untapped export potential, jackfruit has received little attention for value addition in the country.

Only 12 plant species account for 75 percent of global food supply. Therefore, it is crucial to make use of underutilized resources, particularly Special Agricultural Products (SAPs) – such as jackfruit – to improve food security, nutrition, and livelihoods on a large scale.

The Government of Bangladesh selected jackfruit under FAO's 'One Country One Priority Product' (OCOP) initiative. Eighty countries from five FAO regions were designated as potential project countries, with the goal of promoting 50 SAPs.

Bangladesh was selected as one of the first five demonstration countries, along with Egypt, Malawi, Trinidad and Tobago, and Uzbekistan.

The project, called 'Innovative Approaches for Better Plant Production', will support countries to implement the OCOP initiative by promoting innovative approaches for better crop production and SAPs marketing.

FAO launched the Global Action on Green Development of Special Agricultural Products, One Country One Priority Product, in September 2021 based on the FAO Strategic Framework 2022–31. The OCOP promotes inclusive, profitable, and environmentally sustainable food systems through green development of SAPs that include optimizing the structure, functionality, and service of production systems; minimizing losses of crop yields and biodiversity, food loss and waste, misuse of agricultural chemicals, and maximizing integrated agricultural profits to enable the transition to more efficient, inclusive, resilient, and sustainable agrifood systems.

Speakers from FAO included Hafiz Muminjanov, Technical Adviser, FAO Plant Production and Protection Division; Shangchuan Jiang, Project Manager, FAO; and Xuan Li, Senior Policy Officer, FAO Regional Office for Asia and the Pacific. In addition, Xuan Li, Senior Policy Officer, (OCOP regional focal point) and Sridhar Dharmapuri, Senior Food Safety and Nutrition Officer, attended virtually.

## World Soil Day

The Ministry of Agriculture led a World Soil Day celebration, attended by the honourable minister, Muhammad Abdur Razzaque. The theme year's theme was 'Soils: where food begins'.

The importance of soil management is particularly important in Bangladesh where it is estimated that three quarters of soil is now nutrient deficient. FAO Representative Robert D. Simpson spoke of the relationship between soil health and food security. "By respecting and investing in soil health, Bangladesh puts itself in a much better position to achieve food and nutrition security and build resiliency to environmental shocks and climate change," he said.

Soil is a finite resource but is often overlooked and taken for granted. Investing in soils is critical for Bangladesh's sustainable development, as is recognized in a number of national targets and strategies related to soil health. These include prioritization of sustainable soil management practices mentioned in the country's National Agriculture Policy (2018), Bangladesh Delta Plan 2100, and Eighth Five Year Plan.

## Small in scale, big in value: celebrating the country's artisanal fishers



Traditional fishing in the algae-coloured Karatoya river in Naogaon.

The impact of climate change on the country's fisheries sector was the focus of a national dialogue held to mark the International Year of Artisanal Fisheries and Aquaculture 2022. FAO is the lead UN agency for celebrating the year (a closing event will be held in March).

More than one million people in Bangladesh depend on small-scale fisheries and aquaculture for their livelihoods. Nearly 90 percent of all marine capture in Bangladesh is from small-scale or artisanal fishers. Small-scale fishers, many of whom are women, are usually self-employed and provide fish for direct consumption within their households or communities.

Participants at the dialogue included representatives from government departments, development organizations, local communities, and the private sector. Speakers at the event acknowledged the contribution that small-scale fisheries and aquaculture make towards sustainable development in Bangladesh, highlighted the importance of women, and stressed the impact of climate change.

Communities that depend on fisheries and aquaculture are at the forefront of climate change impacts. FAO is working to help these communities adapt. Norman Mushabe, FAO's Senior Technical Advisor for fisheries and climate change, said: "Climate change is having profound impacts on fishery and aquaculture-reliant communities and the ecosystems they depend on, especially in tropical regions. Through capacity development and policy reform, FAO in Bangladesh is helping to build resilience in these communities so that they are better able to cope."

## Training smallholders in rural areas

As part of a project implemented by FAO and the Department of Agricultural Extension (DAE) to support diversification of agriculture for improved nutrition and rural livelihoods in selected COVID-19 hotspots, several trainings were organised for farmers and fishers (more than a third of whom were women). The trainings were conducted by DAE, the Department of Fisheries, and the Department of Livestock Services. Topics included nutrition-sensitive, climate-resilient, and sustainable crop agriculture; sustainable and climate-resilient fish culture; and production management and bird and small ruminant disease prevention. Officers from the Department of Health Services and scientists from the Bangladesh Institute of Research and Training on Applied Nutrition (BIRTAN) taught about good health practices and balanced nutrition.

Furthermore, in liaison with FAO's Pesticide Risk Reduction in Bangladesh project, DAE established plots in 14 districts to demonstrate alternatives to conventional pest control methods, such as the use of pheromones, sticky traps, and other organic pesticides.

## Getting city farmers to grow and eat more vegetables

A project to increase food security for households most affected by the COVID-19 crisis in at-risk low-income urban areas has provided 4 050 smallholder farmers in Dhaka with agricultural inputs and tools including vegetable seeds, seed trays, vermi-compost, silos, spades, nets, and watering cans. The joint FAO, World Food Programme, and United Nations Population Fund project is funded by the Government of Sweden.

The beneficiaries, seven in ten of whom were women, were all trained on how to best produce vegetables in urban and peri-urban areas, and were educated on the nutritional importance of vegetables. The training was led by experts from the DAE and senior professors from Sher-e-Bangla Agricultural University.

In addition, the project organised for 200 producers and smallholders to visit the Bangladesh Agricultural Development Corporation seeds sales centre and Sher-e-Bangla Agricultural University. Participants visited the university's agronomy, horticulture, entomology, and pathology laboratories, as well as research and model vegetable fields. A further visit for 400 people is planned.



## Encouraging youth entrepreneurship

FAO along with Sher-e-Bangla Agricultural University Entrepreneurship Development Club organized an event to engage youth in agro-entrepreneurship. The focus was on urban farming and to hear ideas from young people about how to connect farmers with markets. FAO experts led a series of sessions to identify challenges and youth recommendations for the expansion of agricultural entrepreneurs in Bangladesh, and to encourage them to participate in urban farming. The final session of the event featured a panel discussion with experts and presentations on agricultural business ideas by students from various universities. Prizes were awarded for the three best ideas.

## Rooftop crops to not waste space

FAO's Dhaka Food System project held a training workshop in a bid to increase rooftop agriculture in the capital. Rooftop agriculture would boost Bangladesh's food and nutrition security and make cities greener and cleaner yet only a minority of buildings have them. Growing fruits and vegetables on the country's empty roofs would also help people reconnect with how sustainable food can be produced when there is so much food waste.

In Dhaka, approximately 450 000 roofs, covering 4 500 hectares, remain underutilized. A survey using images from drones concluded that only two percent of rooftops in one part of the city had rooftop gardens.

Another benefit is that food waste can be converted into organic fertilizers and used to nourish plants in rooftop gardens. This decreases the use of potentially hazardous chemical fertilizers and household food waste – a major contributor to the city's waste problem.

The DFS project, funded by the Kingdom of the Netherlands, is working with a local organization, Proshika, to develop 20 rooftop agriculture demonstration plots throughout the city and to train 550 people from slum areas. The Local Government Division of the Ministry of Local Government, Rural Development and Co-operatives is leading implementation with technical support from DFS as well as Wageningen University & Research in the Netherlands.

## Turning waste into wealth

Dhaka's fresh markets are estimated to generate in excess of 5 000 tonnes of organic matter every day but what is thrown away as waste could be put to good use and prove a valuable and renewable source of energy. Bio-digesters could generate biogas from the huge amount of urban food waste. Biogas is a mixture of gases from raw materials such as agricultural waste, manure, municipal waste, plant material, sewage, green waste, and food waste.

Around 100 participants from government departments, city corporations, development organizations, fresh market committees, and the private sector, joined a national dialogue to discuss this innovative investment opportunity. The dialogue, held at the Department of Public Health Engineering, was organized by the DFS project. Experts from FAO, as well as Wageningen University & Research, made keynote presentations.

Xavier Bouan, the project's Senior Technical Adviser, said: "To increase the limited available lifespan of existing landfills, it is essential to promote the recycling of food-related waste, which comprises a significant proportion of municipal waste." The project is training 130 officials from fresh markets across the four city corporations on food safety, food loss and waste reduction, food handling, waste management, and waste segregation. In addition, the project will provide 370 bins to ten model fresh markets in a bid to promote waste segregation. Two of the city's corporations produce more than 5.5 million tonnes of waste a year, 70 percent of which is food-related organic waste.

An alternative waste disposal method utilizes black soldier flies. FAO is piloting this option with Sher-e-Bangla Agricultural University. Larvae feed voraciously on various types of organic waste, including food waste, agro-industrial by-products, and chicken and dairy manure. They reduce the initial weight of the organic waste about 50 percent quicker than conventional composting.



A worker carts away wasted vegetables at a market in Dhaka.

## From national nutrition guidelines to practical healthy eating advice

Building on Bangladesh's success in terms of food security, the focus now is increasingly on nutrition security – ensuring that everybody has access not only to enough food, but enough healthy, nourishing food. With support from FAO, the Ministry of Food has developed policies to improve the country's nutrition. As part of this ongoing effort, the Ministry and FAO held a series of training workshops for local government officials that will empower them to develop practical nutrition and meal

planning advice, based on the country's updated dietary guidelines.

This workshop was organized by the Food Planning and Monitoring Unit (FPMU) of the Ministry of Food and FAO's Meeting the Undernutrition Challenge (MUCH) project which is funded by the European Union and the United States Agency for International Development (USAID).

The MUCH project helps Bangladesh respond to food security and nutrition challenges, focusing on developing government capacity, as well as the formulation and implementation of improved policies, strategies, and programmes.

Nutrition security means consistent access, availability, and affordability of foods that promote health and well-being, particularly among lower income communities and sensitive populations such as children and the elderly.

Approximately a quarter of the country's population live below the poverty line, with many enduring extreme poverty. Combined with rapid population growth and urbanization, these place significant pressure on food and nutrition security.

Nur Khondaker, FAO Assistant Representative (Programme), said: "As we continue to work for zero hunger we must remember the importance of food for health and well-being. This training is an important step towards developing easy-to-understand and practical nutrition advice for people."

Bangladesh has developed a nutrition policy framework that includes the National Nutrition Policy 2015, the Second National Plan of Action for Nutrition, the Bangladesh Second and Third Country Investment Plans, and the National Food and Nutrition Security Policy 2020. The next phase is to develop and communicate practical nutrition advice to the public.

The National Food-Based Dietary Guidelines 2020 are based upon the latest available surveys while taking on board the changes in policy frameworks since 2015. The guidelines emphasize the importance of people's dietary habits and choices, recommended nutrient intake, the nutritional content of food, plus food safety and quality.

District and divisional officials from 18 ministries and agencies that are engaged in extending nutrition education across the country attended the training that was held at the Bangladesh Agriculture Research Centre (BARC) auditorium in Dhaka. Facilitators from FPMU conducted sessions on the country's food and nutrition security situation and policies.

## Ensuring quality veterinary education

FAO has been supporting the training of veterinary teachers as part of the country's veterinary workforce development. FAO's Emergency Centre of Transboundary Animal Diseases (ECTAD), in collaboration with the Cummings School of Veterinary Medicine at Tufts University in the United States of America, provided training sessions on pedagogical skills and livestock disease control at Bangabandu Sheikh Majibur Rahman Agricultural University, Gazipur, and Bangladesh Agricultural University, Mymensingh.

## Woof! Experts from Indonesia show how to catch street dogs for rabies jab

A dog vaccination programme is a key component of the Government's ambition to eradicate rabies. FAO Member States in Asia-Pacific are committed to eliminating rabies by 2030. In collaboration with the Government, ECTAD has been running a mass dog rabies vaccination campaign in Bangladesh. To strengthen this campaign, the ECTAD programmes in Bangladesh and Indonesia partnered to provide advanced training for dog catching and vaccination. The Indonesian government has eradicated rabies through mass dog vaccination as part of a One Health approach.

Many countries have tried mass dog culling but the method has proven ineffective. Mass dog vaccination is the most cost-effective method to control both dog rabies and to reduce the risk of human rabies. In Bangladesh, rabies kills around 260 people every year. Catching and handling street dogs takes skill and practice. During the intensive five-day training programme in Dhaka, experienced dog catchers and vaccinators from Indonesia shared their experience and techniques, providing 'training of trainer' training to five teams from Bangladesh. This will enable the Bangladesh teams to pass on what they learned, boosting the number of dogs vaccinated per day whilst keeping themselves safe and the dogs protected.



Hands-on Dhaka street dog rabies vaccination training.

## FAO hands over mini-trucks to help farmers and landslide response



At the handover ceremony for the new mini-trucks.

FAO has handed over seven mini-trucks to help smallholder farmers and support landslide work in the Cox's Bazar region. Five aggregation centres each received a mini-truck. Another two mini-trucks were provided to assist with landslides.

FAO has established a network of 20 aggregation centres in Cox's Bazar to link farmers with markets. An aggregation centre is a trading place for locally-grown produce. The mini-trucks will collect and distribute farmers' produce, and by doing so will generate extra income for the centres, helping to secure their financial sustainability.

The Kingdom of the Netherlands and Canada provided two trucks each and the World Food Programme provided one. In addition, with financial support from USAID's Bureau for Humanitarian Assistance, FAO handed over an additional two mini-trucks to support landslide work, one to the Forest Department, and one to the Cyclone Preparedness Programme (CPP). The mini-trucks were handed over in a ceremony held in collaboration with DAE.

A number of international partners have been working with FAO for a number of years to support agricultural communities in Cox's Bazar: Canada, Sweden, Norway, the Netherlands, United Kingdom, and the United States.

## Bangladesh better prepared for monsoon floods

Smallholder farmers in areas vulnerable to monsoon floods will be better prepared this year thanks to a scaling-up of anticipatory action. Last year, record-breaking floods wreaked havoc, affecting an estimated 7.2 million people in the north-eastern region.

A shift in strategy from responding to recurring shocks to anticipating their effects has the potential to break the cycle of increasing reliance on humanitarian aid by protecting the most vulnerable and their livelihoods ahead of time. Evidence suggests that preparing for crises can reduce food insecurity and make vulnerable communities more resilient.

FAO, in consultation with the Regional Integrated Multi-Hazard Early Warning System (RIMES), the Flood Forecasting and Warning Centre (FFWC), and other stakeholders, developed a pre-monsoon anticipatory action response plan for the wetland Haor region under the 'Increasing Capacities and Scale for Anticipatory Action, including Through Social Protection Systems Project' which is funded by the European Civil Protection and Humanitarian Aid Operations (ECHO).

Partners and stakeholders attended a validation workshop, held at the Department of Disaster Management, to co-ordinate flood response implementation and validate the level of flooding that would trigger an emergency response.

Bangladesh is one of five countries in Asia, (along with Lao People's Democratic Republic, Pakistan, the Philippines, and Viet Nam) that is piloting a programmatic partnership between FAO and ECHO to scale-up anticipatory approaches to crises.

ECHO Director-General and Head of Unit for Strategic Partnerships, Susanne Mallaun, visited Bangladesh to follow up on the ongoing support for the development of anticipatory action in the Haor region. She met farmers in flood-affected communities in Kishoreganj.

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