

# COOP Dialogue

## Issue 3: Cooperatives' Contribution to Climate Action



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# 1. Editorial

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Dear Readers,

We are delighted to present the third issue of COOP Dialogue (CD3) on 'Cooperatives' Contribution to Climate Action'!

The 27th Conference of the Parties (COP27) to the United Nations Framework Convention on Climate Change that concluded in November 2022 reached a breakthrough agreement to provide "loss and damage" funding for vulnerable countries hit hard by climate disasters. COP27 also resulted in countries delivering a package of decisions reaffirming their commitment to limit global temperature rise to 1.5 degrees Celsius above pre-industrial levels, strengthen actions to cut greenhouse gas emissions, and boost the support of finance, technology, and capacity building needed by developing countries.

The Asia-Pacific region is the most disaster-prone in the world and climate change is even more daunting here because of the high vulnerability among its population comprising of the poorest, marginalized, women and youth. While world leaders and national governments are making efforts to address the effects of climate change at their own levels, cooperatives and members have taken diverse measures to combat climate change.

CD3 begins with an overview of the climate change situation and action taken by cooperatives in the Asia-Pacific region. This is followed by the voices of youth in Asia and their eco-friendly actions to secure the planet and their future. The chapter on the Go Green Campaign, an initiative of the ICA Asia and Pacific Youth Committee showcases how the campaign has now reached a global scale through the efforts of young cooperators. This issue covers actions taken by cooperatives in Palestine, India, China, Japan, and the Philippines across diverse sectors such as renewable energy, agriculture, retail, education, and insurance. These range from adopting small steps like reducing plastic straws on the university campus, reducing CO2 emissions by switching to biofuels, and providing insurance to farmers against natural disasters and unfavourable weather. The examples covered show the immense potential to be adapted and replicated by other cooperatives in the region.

We would be pleased to hear from you and know how you benefitted from the examples showcased here. If you like any article and find it of use for your own cooperative, feel free to write to us. We would also like to encourage you to continue having a dialogue on the topics covered in this issue within your organization and country. You can also tag us in your social media posts.



We take this opportunity to thank the Advisory Committee members of Coop Dialogue - Prof. Akira Kurimoto, Chairperson, ICA Committee on Cooperative Research and former Professor at the Institute for Solidarity-based Society, Hosei University, Japan; Dr. Sidsel Grimstad, Vice-Chairperson, ICA Asia and Pacific Committee on Cooperative Research and Senior Lecturer and Researcher, Newcastle Business School, University of Newcastle, Australia; Mr. Dudz Samson, Brand Consultant, C&S Co-op Supermart, Philippines; Dr. Hema Yadav, Director, Vaikunth Mehta National Institute of Cooperative Management, India; and Ms. Anahita Eslapazhir, CEO, Rah-e-roshd Cooperative Educational Complex, Iran - for their rich advice, inputs, and guidance.

You can read the previous issues here:

1. [May 2022 Future Proofing Cooperatives in Asia and Pacific through Innovations](#)
2. [November 2021 Cooperative Identity in Asia and Pacific](#)

For feedback and queries, feel free to write to us at:  
[coopdialogue@icaap.coop](mailto:coopdialogue@icaap.coop).

Best Wishes,  
Coop Dialogue Team



## 2. Cooperatives' Contribution to Climate Action in Asia and Pacific

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The global impact of COVID-19 has enhanced the importance of climate action. Cooperatives in agriculture, fisheries, forestry, and consumer sectors have a large membership base, and the effects of climate change are felt directly in the form of crop loss, lower productivity, soil erosion, depletion of forest cover, and loss of cattle, resulting in increasing poverty and food insecurity. Cooperatives in Asia and Pacific across all levels are demonstrating through their actions the intent and capacity to combat climate change and are emerging as economic actors in climate change adaptation (e.g., mutual insurance for crops, support diversification of crops and improve watershed management) and mitigation (e.g., renewable energy, forestry, and agroforestry) across countries.

Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural but are also accelerated due to human activities. Humans are increasingly affecting the climate and raising temperature levels by burning fossil fuels (coal, oil and gas), cutting down forests, farming livestock, overusing resources, and rising consumerism. All this adds hugely to greenhouse gases and increases the greenhouse effect and global warming (UN report). According to the WHO, "changes in infectious disease transmission patterns are a likely major consequence of climate change. Rising temperatures can create favorable conditions for the spread of certain infections, while disappearing habitats may force various animal species to migrate, increasing the chances of spillover pathogens between them."



**Australian Bushfires**

**Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural but are also accelerated due to human activities.**



Climate change severely impacts people's lives and livelihoods around the world. It is more profound for small businesses and agricultural communities, and the brunt is borne by the vulnerable, economically disadvantaged, minorities, and women. UN Women notes that, across the world, women depend more on, yet have less access to, natural resources. In many regions, women bear a disproportionate responsibility for securing food, water, and fuel. Agriculture is the most important employment sector for women in low and lower-middle-income countries; during periods of drought and erratic rainfall, women, as agricultural workers, and primary procurers, work harder to secure income and resources for their families.

The Asia-Pacific has the largest number of vulnerable population and is the most disaster-prone region in the world. Natural disasters not only disrupt business and life as usual but impede the long-term development and growth of people by impacting psychological, emotional, and physical health. Conditions like sea-level rise and saltwater intrusion have advanced to the point where whole communities have had to relocate, and protracted droughts are putting people at risk of famine. In the future, the number of "climate refugees" is expected to rise.

In 2021, UN Secretary-General António Guterres stressed that "2021 is a make-or-break year for climate action in the context of the COVID-19 recovery." Post COVID-19 pandemic, public health and that of the environment, have assumed urgency and prime importance globally. To combat climate change, stronger and proactive efforts are needed by adopting preventive, adaptive, mitigative and responsive measures, and developing long term resilience.

Two international agreements - the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement and the 2030 Agenda for Sustainable Development - jointly provide overarching goals for climate action.

The 27th Conference of the Parties (COP27) marks 30 years since the UNFCCC was adopted and seven years since the Paris Agreement was agreed upon at COP21. The key points under discussion are:

- Keep the rise in global average temperature to 'well below' 2°C, and ideally 1.5°C, above pre-industrial levels
- Strengthen the ability to adapt to climate change and build resilience
- Align finance flows with 'a pathway towards low greenhouse gas emissions and climate-resilient development'.

COP27, which concluded in November 2022, reached a breakthrough agreement to provide "loss and damage" funding for vulnerable countries hit hard by climate disasters. COP27 also resulted in countries delivering a package of decisions reaffirming their commitment to limit global temperature rise to 1.5 degrees Celsius above pre-industrial levels, strengthen actions to cut greenhouse gas emissions and boost the support of finance, technology and capacity building needed by developing countries.

The 2021 International Cooperative Alliance-European Union (ICA-EU) global thematic research report on 'Cooperation for the Transition to Greener Economy' states that "we need a different way of doing business if we are to alter the current trajectory of fatal planetary warming". For cooperatives, an alternative answer to sustainability challenges is already embedded in its enterprise model, through cooperative values and principles. In particular, it is the 7th cooperative principle of 'Concern for Community', the most recent addition to the cooperative principles, which was adopted at the Manchester Congress in September 1995.

Cooperatives in Asia and Pacific across all levels have demonstrated through their actions the intent and capacity to combat climate change in a people-planet-friendly manner. The Association of Asian Confederation of Credit Unions (ACCU) has prepared the climate action business guide to be used by cooperatives in the credit sector; the Indian Farmers' Fertilizer Cooperative Ltd. (IFFCO) has developed nano urea for farmers to practice sustainable agriculture; Business Council of Cooperatives and Mutuals (BCCM), Australia provided solidarity support to cooperatives and advocated with the government during bushfire crisis in 2019-2020; Iran Chamber of Cooperatives (ICC) raised funds to support cooperatives affected by floods and Nepal Cooperative Federation (NCF) and National Agricultural Cooperative Central Federation Ltd. (NACCFL) undertook rescue and rehabilitation/reconstruction work during the Nepal earthquake disaster in 2015. The Japanese Consumer Cooperatives' Union (JCCU) promotes renewable energy and is a signatory to



the Call to Action by Business for Nature, the international coalition on biodiversity. In the Philippines, the National Confederation of Cooperatives (NATCCO) and the Philippines Cooperative Center (PCC) support small cooperatives on coastlines, frequently affected by typhoons and tsunamis. The actions taken by these and other cooperatives in the region, their individual members and employees significantly contribute to the global fight against climate change. In urban areas, cooperatives exist in waste management systems, particularly in the form of waste picker cooperatives.

The International Cooperative Alliance-Asia and Pacific (ICA-AP) used the 2020 International Day of Cooperatives which celebrated the theme, 'Cooperatives for Climate Action,' to reinforce the 7th Cooperative Principle, mobilize members to commit to climate action and achieve a fair, green and just transition for all communities, leaving no one behind. Some of the ways in which it asked members to facilitate climate action were:

**Promote the cooperative identity:** The real economy of farmers and workers was essential to economies during the pandemic crisis. ICD is an ideal time to engage the public about the cooperative model and spread awareness about its principles and values. JA-Zenchu in Japan and National Agriculture Cooperative Federation in Korea organise public tours to agriculture cooperatives to learn more about the lives of farmers, the role of cooperatives, and their contributions to sustainable development and give young people hands-on-experience in growing vegetables and urban gardening.

**Reduce carbon footprint:** Many members have started taking measures to reduce their carbon footprint. LAMAC Multipurpose Cooperative in the Philippines is recognised as a model for sustainable development by the Cooperative Development Authority and Climate Change Commission for their reforestation and recycling work; at the Drawa Block Forest Community Cooperative in Fiji landowners have given up rights to logging timber in exchange for the opportunity to sell rainforest carbon offsets as a way of generating revenue for local economic development.

**Greener environment campaign:** The ICA-AP Committee on Youth Cooperation annually carries out the Go Green Campaign to link youth and SDGs and create an identity for cooperatives as a sustainable model for environment and society. In India, the Indian Farm and Forestry Development Cooperative is acquiring barren lands and greening them, and several other cooperatives in India are planting thousands of trees in their areas of operations. SANASA Credit Cooperatives in Sri Lanka are promoting

Sri Lanka’s NEXT Blue-Green “Lassana Lanka” (Beautiful Sri Lanka) program for the development of 10,000 sustainable villages.

**Implement the 5 R’s:** Refuse, Reduce, Reuse, Repurpose, and Recycle. Low-cost and easy changes to implement in offices and homes through the following actions:

**Refuse** – single-use plastics and replace them with reusable and recyclable plastics, cloth or jute bags


**Reuse** – cutleries

**Recycle** – paper, plastics, metal, and e-waste.

**Save** – turn off lights at the end of day

**Segregate waste** – separate wet, dry, recyclable and non-recyclable waste.

**Create a Fund:** Cooperatives in the region have shown solidarity during cyclones, earthquakes, tsunamis and typhoons. The iCOOP Stabilisation Fund and the Indian Farmers Fertilizer Cooperative’s Kisan Sewa Trust are examples of funds which were used in recent times to respond to member needs.



ICA-AP proposed a cooperative fund created by members in the region, to enable assistance across sectors and countries in times of need.

**Environmental Audit:** Urged members to look at the SDG13 targets and indicators, commit to the ones they can implement and report on the results. This is to help increase the visibility of cooperatives and their contribution to the implementation of SDGs.

The global impact of COVID-19 has enhanced the importance of climate action as both don't respect borders, affect everyone, can cause irreparable damage, and threaten existence. The global crises (financial, climate, health) remind us that we live in a common home where we are all individually vulnerable and at the same time collectively interdependent. It's more urgent than ever to COOPERATE. Only together, we will overcome global challenges.

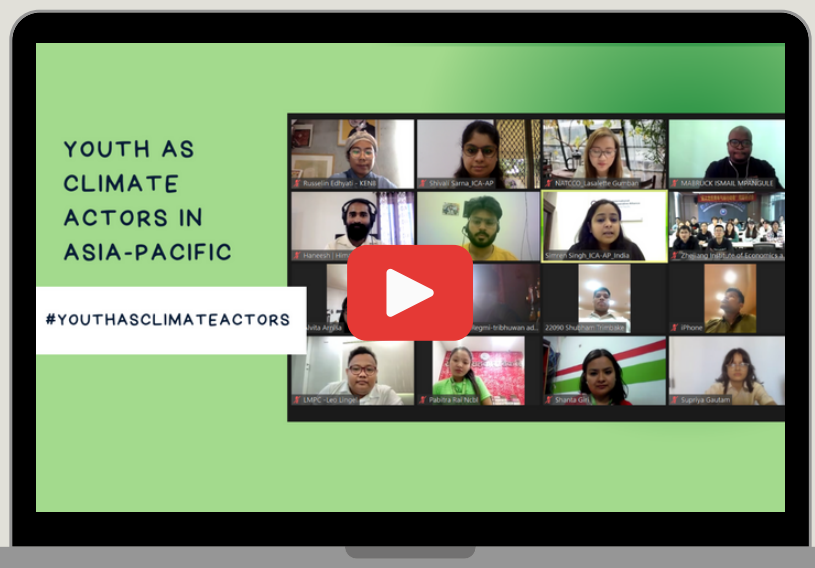



# 3. Youth as Climate Actors in Asia and Pacific

The Asia-Pacific region has 60 per cent of the world's youth population. They are not only the future of this region but also potential victims of climate change and its consequences that will accrue in times to come. But what is climate change? Is it only long-term shifting of temperatures and weather patterns? Or is it something we all experience from time to time but cannot describe in the right words? Whatever may be the face of climate change, climate actions do not have one face. Climate action comes in all forms and sizes. And, regardless of whether our actions are at the individual level, implemented in our schools, colleges, or organisations, or in wider community, it is true that all actions - big and small matter. And they matter because today's youth are the future, and it is not fair that they face the consequences of climate change.

For this issue of COOP Dialogue, ICA-AP regional office held a webinar on "Youth as Climate Actors in Asia-Pacific" on 14 October 2022. This webinar was special because we showcased actions taken by young people who not only believe that climate change matters to them but also believe that climate change is best addressed when we collaborate, partner, and cooperate with each other. It was special because other than the panelists, we were joined by more than 80 young people from different countries in the region who were eager to learn about different ideas and share their experiences and practices with each other.

Watch the webinar here





Youth Coordinator of the LAMAC MPC Youth Planet Laboratory Cooperative in the Philippines, Mr. Leo Lingel T. Panares, spoke about the integrated organic farm school and farm tourism promoted by LAMAC. Ms. Russelin Edhyati, a member of the KEN-8 Cooperative in Indonesia explained the use of permaculture for sustainable co-living. Mr. Haneesh Katnawar, Co-founder of Himalayan Hemp Cooperative in India discussed how hemp and cannabis plants can be used to produce eco-friendly products and showed the products developed by his cooperative. Ms. Usha Niraula, a school student and child club member of the National Cooperative Bank Ltd. in Nepal shared initiatives taken by her at a personal level to combat climate change. She emphasized the need to take small steps daily.

A special guest, Ms. Lasalette M. Gumban who is the Unit Head for the Diaspora and Climate Action Program at NATCCO, Philippines, spoke about her journey in the cooperative sector which dated back to her school days and why she chose to become an eco-ambassador for youth at NATCCO.

The first half of the webinar focused on initiatives taken by the panelists, their views on climate change, reasons for opting for a cooperative model, challenges faced and future plans. The second half focused on an open dialogue between the panelists and participants. Young participants interacted freely in the chat box and during the open forum to learn and share ideas with each other.

### **Some of the challenges faced by youth in cooperatives while acting towards climate change are:**

1. Very few people know that cannabis and hemp plant can be used to make eco-friendly products. Social taboos, legal challenges, the clout of rich farmers, and climatic conditions in the mountains make it difficult for small farmers to form groups to cultivate such plants for making eco-friendly products.
2. Independent actions taken by individuals in the community such as those taken by Usha in Nepal can be challenging. People in the neighbourhood do not always encourage personal actions and are uncooperative.
3. It is difficult to keep young people interested and committed to green initiatives and cooperatives for long without adequate rewards.

### **Suggestions to involve youth in cooperatives and climate action:**

1. It is important to incentivise young people to remain involved in cooperatives and green action. A few ways to keep them interested are by giving scholarships, travel opportunities to participate in climate-based events, and recognising their contribution.
2. Young people need mentorship and support at all stages – from ideation to creation. Good mentorship and technical/financial support can help them put in place environmentally sustainable business ideas.
3. Cooperatives can adopt the model of laboratory cooperatives as practised in the Philippines to educate and train young people about cooperatives and involve them in green initiatives.

# 4. Greening the Earth: Journey of ICYC's Go Green Campaign

By: ICA-AP Committee on Youth Cooperation

The Covid-19 pandemic and the consequent lockdowns, amidst unprecedented agonies that humans could ever imagine, also did one good thing. It started healing our planet! The pandemic was a wake-up call for us to start acting towards climate change. As people were shut indoors, the environment showed signs of healing. Not only did we see spotless roads and a reduction in noise pollution but there was a miraculous improvement in the quality of air. To their utter surprise, people realized that they were breathing clean air. What if we say that ICA-AP Committee on Youth Cooperation (ICYC) had a small but determined part in it? Back in the middle of the pandemic, ICYC members planted more than 17,000 trees across

Asia-Pacific countries and around 20,000 trees globally as part of its Go Green Campaign (GGC).

## What is the Go Green Campaign; why was it started?

The campaign was initiated in 2018 with three main objectives - 1) To create awareness about climate change and to unite youth and cooperatives to fight for UN SDG13-Climate Action, 2) To collaborate with different cooperatives and international agencies and 3) To create green jobs for youth in the region. Mr. Ahsan Ali Thakur initiated the campaign to encourage youth from the Asia-Pacific region to combat the global threat of climate change and its impact by planting trees.

**GGC encourages the youth to combat the global threat of climate change and its impact by tree plantation.**



ICYC Members celebrating GGC 3.0



Based on the belief in the cooperative value of 'Self-Help and Solidarity', the campaign manifests that youth and cooperatives are integral actors in the implementation of SDG13-Climate Action.

The crux of the Go Green Campaign is 'ethical planting'. The prerequisites were: to know the ecological requirements of the area where the saplings will be planted; ensure the area receives ample sunlight and water; ensure plants alien to the area which could hamper the soil are not planted, and seek permission before planting in public areas like schools or hospitals. In 2018, ICYC members from Indonesia, Iran, Nepal, Palestine, Pakistan, the Philippines, and Thailand participated in GGC. Read the report of GGC 1.0 [here](#).

In 2019, the campaign was taken forward in collaboration with the Africa region. The theme for GGC 2.0 was 'Protect your Species' by ethical planting, and it ran for three days from April 21 to 23, 2019. Over 200 youth from India, Indonesia, Iran, Nepal, the Philippines and Pakistan undertook tree plantation drives in their offices and neighbouring areas. The youth from the Philippines also took up a clean-up drive at the beaches.

In 2020, in the middle of the pandemic, the campaign was extended to the Americas region. Youth in the three regions - Asia-Pacific, Africa, and Americas, planted trees, encouraged initiatives towards climate action; propagated and promoted the Cooperative Identity in the community. Read the full report of GGC 3.0 [here](#).



**Beach cleaning drive in the Philippines, 2019**

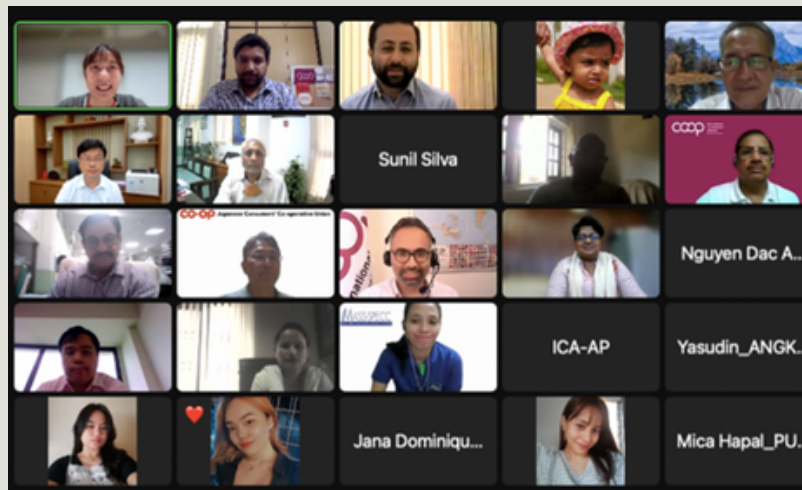
In 2021, the International Cooperative Alliance in collaboration with its Global Youth Committee organized Global Youth Forum (GYF). The forum brought together young entrepreneurs and professionals from across the world. ICYC had an opportunity to share its success story about the campaign during the session "Youth Green Cooperative: Initiatives Connecting SDG-13, Youth and Cooperatives in Asia and Pacific".



**ICYC at GYF2021**

Three speakers from ICYC - Ms. Youhana Tamara Yunsia from Credit Union Keling Kumang Indonesia; Mr. Cecile Jay L. Masanegra from AIMCooP, Philippines; and Ms. Ducle S. Bustamante from Yes Coop Philippines shared success stories from their respective countries. Ms. Bustamante shared how the Young Entrepreneurs Service Cooperative (Yes Coop) undertook tree plantation in Imus, Philippines. The “Eco-Savers Program”, initiated by the local government along with cooperatives and schools under the Department of Education involved setting up a laboratory (student) cooperative. Initiated in 2018, now it has over 40,000 members. The coop aims to help resolve growing environmental challenges like waste segregation and management. Students collect waste to reuse and recycle and invest the money earned from this activity into their laboratory cooperative. Mr. Masanegra shared AIMCooP’s campaign in the Philippines and their efforts to develop and nurture the mindset of children in their formative years to care for the environment. Ms. Tamara shared milestones of the youth’s growing interest in GGC and enthusiastically adopting it in Indonesia.

After creating a successful awareness program about the campaign, the committee invited more cooperatives to be a part of the campaign. In 2022, ICYC, in collaboration with the Malaysian National Cooperative Movement (ANGKASA), ICA-AP Committee on Consumer Cooperation and ICA-AP Committee on Forestry launched the fourth edition of GGC with a webinar on the theme #OnlyOneEarth to commemorate World Environment Day.



### GGC 4.0 Kick-off Webinar, 2022

“Only One Earth” was the slogan for the 1972 Stockholm Conference. Fifty years later, this truth still holds- this planet is our only home. The focus of the webinar was to create awareness about climate action through varied activities other than planting trees. It focused on Involving Youth, Promoting Cooperative Identity, Environmental Action, and Mitigating Climate Change-#SDG13.

ICYC not only supports the UN SDG13 on Climate Action but also encourages youth to proactively participate in saving the planet for future generations by preserving and planting trees, and following the 3Rs- Reduce, Re-use, Recycle.

Now that we are close to the end of the pandemic, it is more important than ever to train our thoughts back on the environment. With the help of the ICA-AP regional office and its thematic committees, we are collaborating with different coop members to promote GGC and encourage youth to plant trees and promote SDG-13 Climate Action.

# 5. Japanese Consumer Co-ops Tackling Climate Change

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**By: Mr. Yasuo Shiraki, Sustainability Section, Social and Community Activities Department, Japanese Consumers' Co-operative Union (JCCU)**

## **Consumer Cooperatives Addressing Environmental Issues**

Japanese consumer cooperatives have developed businesses and activities that place importance on the global environment and social sustainability, based on their mission of creating a more human lifestyle and sustainable society[i]. Over their long history, they have addressed various environmental issues through product development and members' activities. As they are especially environmentally conscious, in the 1960s, they developed an environmentally friendly detergent in cooperation with their members to tackle river pollution, which was a social issue at the time.

In 1978, Co-op Kobe launched a campaign to reuse plastic shopping bags (now known as the Bring Your Own Bag Campaign) to promote the effective use of resources and waste reduction. As this initiative spread nationwide, many consumer cooperatives began charging for plastic shopping bags in their stores in the 1990s. This was 30 years before the Japanese government mandated that businesses charge for plastic shopping bags. In addition, individual members were very aware of the importance of recycling, which led to the development of a campaign to collect milk cartons in the 1980s. Consumer cooperatives accounted for about 20% of all milk cartons collected in Japan in 1989.

## **Efforts to Reduce Greenhouse Gas Emissions by 2020**

Addressing global warming became important globally in the 1990s with the United Nations Conference on Environment and Development held in 1992 and the Framework Convention on Climate Change coming into effect in 1994.

In this context, the Japanese Consumers' Co-operative Union (JCCU) and its member cooperatives formulated the Consumer Co-op Medium-term Plan for Environmental Conservation in 2000 and identified three major challenges: establishing a recycling-oriented system, reducing environmental risks caused by chemical substances, and tackling global warming. In 2010, we set climate change as one of the key challenges in the New Environmental Policy of Consumer Co-ops for 2020, a long-term policy aiming to reduce CO2 emissions in consumer co-ops' businesses by 15% by 2020 compared to fiscal 2005.

**In 2010, JCCU set climate change as one of the key challenges in the New Environmental Policy of Consumer Co-ops for 2020.**

The main initiatives to achieve this target are energy conservation and the introduction of renewable energy. To promote energy saving in stores, facilities, and vehicles, consumer cooperatives opened new stores based on the Eco-friendly Store Concept[ii] and tried using biofuel for home delivery trucks. To introduce renewable energy, since the liberalization of electricity retailing in 2016[iii], consumer cooperatives have established their own electric power companies and supplied electricity, generated mainly from renewable sources, to their business facilities, stores, delivery centres, and members. In fiscal 2020, renewable energy sources accounted for 47% of energy procured by consumer co-ops. As a result of these efforts, CO2 emissions in fiscal 2020 were 627,722 tons of CO2 equivalent, a 26.5% reduction compared to fiscal 2005, far exceeding the target.

What is distinctive about consumer cooperatives' actions against climate change is that they aim to reduce CO2 emissions not only in their businesses but also in their members' daily lives. For example, JCCU has indicated carbon footprints on its private brand products to make individual members more aware of CO2 emissions in their daily lives[iv]. In addition, around 2010, consumer cooperatives nationwide run a campaign to promote household energy saving and contribute to reducing CO2 emissions by encouraging their members to work on the One-day Self-assessment on Eco-friendly Efforts, which lists daily energy-saving measures and CO2 emissions cuts.

### Co-op Action Plan for SDGs and Consumer Co-op 2030 Environmental Sustainability Policy

Following the adoption of the Sustainable Development Goals (SDGs) at the United Nations in 2015, JCCU developed the Co-op Action Plan for SDGs in fiscal 2018, where consumer cooperatives pledged to realize SDGs through seven actions. To address climate change, consumer cooperatives pledged to “spread the use of renewable energy and promote Global Warming Countermeasures” through a number of actions (as mentioned in the box on page 17).

We have set ambitious greenhouse gas emission targets as our "2030 Environmental Target" to confront climate change that threatens the sustainability of the Earth while conserving energy and introducing renewable energy. To develop into a society which does not rely on nuclear energy, we will promote renewable energy generation and encourage more members to use renewable energy.

**わが家の1日エコライフレポート** (冬)

1日エコライフに取り組みました人数:  人

エコライフ項目	1日ですらえるCO2削減量*	実行できた人数	減らせたCO2の合計量
1 暖房の設定温度を20℃以下にした	179 g	<input type="checkbox"/>	g
2 コタツの設定温度を低めにした	165 g	<input type="checkbox"/>	g
3 電気ポットでの保温をやめ、使うたびに沸かした	168 g	<input type="checkbox"/>	g
4 お風呂は湯をあけずに続けて入った	238 g	<input type="checkbox"/>	g
5 テレビはつけっぱなしにせず、見ていないときは消した	26 g	<input type="checkbox"/>	g
6 部屋を出るときは明かりを消した	34 g	<input type="checkbox"/>	g
7 自転車を使わず、徒歩や自転車移動した	220 g	<input type="checkbox"/>	g
8 買い物にマイバッグを持参し、レジ袋はもらわなかった	42 g	<input type="checkbox"/>	g
●減らせたCO2の総合計			g

この冬実行したこと

実行したら
1 家や部屋の断熱性をよくする工夫をした…たとえば、厚手のカーテンに取り替える、カーテンを二重にする、窓ガラスに断熱フィルムを貼る、床や壁の断熱材を厚くするなど
2 コタツや電気カーベットの熱を逃かさないう工夫をした…たとえば、コタツ布団を厚手など保温性の高いものに取り替える、電気カーベットの下の断熱マットなどを敷く、など
3 白熱電球を電球型蛍光灯やLEDに換えた*( 個、または ク所) ※蛍光灯やLEDは白熱電球より消費電力が小さい
4 自分で工夫して実行したエコアイデア(記入)

1日エコライフに取り組みました感想

実行日 月 日

記入した「わが家の1日エコライフレポート」は、配達担当者や店舗サービスカウンターへお渡しください。

### One-day Self-assessment on Eco-friendly Efforts (Winter Version)



## Co-op Action Plan for SDGs

1.

We will spread the use of renewable energy and promote Global Warming countermeasures.

2.

We will continue to review & improve our products and lifestyle for sustainable production and consumption.

3.

We will eliminate poverty and hunger from the world and promote support for children.

4.

We will promote activities to eliminate nuclear weapons and achieve world peace.

5.

We will promote gender equality and create an inclusive society.

6.

We will participate in creating a society where everyone can live with a sense of security.

7.

We will expand health promotion and promote welfare services and mutual help.

In fiscal 2021, to put this action plan into practice, JCCU formulated the Consumer Co-op 2030 Environmental Sustainability Policy. This policy sets ten action guidelines and five goals toward 2030 (see Table 1), among which Action Guidelines 2 and 3 (underlined) are to tackle climate change.

The target to reduce CO2 emissions was previously 15% by 2020 but has now been raised to 40% by 2030. Measures include the introduction of electric delivery trucks and the shift from chlorofluorocarbons to natural refrigerants for refrigerated and freezer display cases in stores, in addition to energy conservation and the introduction of renewable energy. Since no electric trucks of the same size as consumer co-ops' home delivery trucks (gross vehicle weight of less than 3.5 tons) are not available in the market, research and demonstration tests are underway.



**Electric Delivery Truck of Palsystem Kanagawa under Demonstration Test**

Action Guideline 3 is unique in that it sets the development of renewable energy as an action guideline and goal. The share of renewable energy in Japan's power generation is low with 18% in fiscal 2018. Therefore, there is a concern that large companies will compete for scarce renewable energy if they try to use renewable energy at once. Considering that about 30% of the electricity used by consumer cooperatives[v] needs to be generated by themselves, the JCCU has set this goal.

**Table 1: Action Guidelines and 2030 Goals of the Consumer Co-op  
2030 Environmental Sustainability Policy**

	Action Guidelines	2030 Goals
1.	We will expand and popularize products that support ethical consumption and increase the number of consumers in society who are sympathetic to ethical consumption.	-
2.	<u>We will reduce greenhouse gas emissions throughout the supply chain of the cooperatives' businesses and their members' livelihoods.</u>	<u>We will reduce CO<sub>2</sub> emissions by 40% by 2030 compared to 2013.</u>
3.	<u>Through the development of renewable energy, we will increase the amount of renewable energy introduced in Japan and contribute to the creation of sustainable communities.</u>	<u>We will develop renewable energy with an annual power generation of 400 million kWh by 2030.</u>
4.	We will reduce the amount of plastic containers packaging and paper used in cooperative businesses. We will also promote the switch to sustainable raw materials.	<ul style="list-style-type: none"> <li>▪ We will reduce the amount of single-use disposable plastic containers used for packaging by 25% by 2030 compared to fiscal 2018.</li> <li>▪ We will reduce the amount of paper used for product catalogues by 25% by 2030 compared to fiscal 2021.</li> </ul>
5.	We will work together with cooperative members to collect and recycle containers and packaging generated in the cooperative businesses.	-
6.	We will promote the reduction of food waste and food loss generated by the cooperative businesses and members' households.	We will reduce food waste by 50% by 2030 compared to fiscal 2018.
7.	Throughout the supply chain, we will promote "responsible procurement" that respects human rights and considers the environment.	-
8.	We will promote environmental conservation activities together with cooperative members and aim to realize a society in harmony with nature.	-
9.	We will take on the challenge of new collaborative efforts to solve various issues related to the environment and sustainability.	-
10.	We will actively disclose our work related to environmental and sustainability initiatives and promote dialogue with society.	-

Consumer cooperatives have been generating electricity in various ways, such as solar power, wood biomass power, wind power, small-scale hydroelectric power, and agrivoltaic. They had developed up to 200 million kWh (installed capacity of approximately 113 MW) by fiscal 2021.

### Future Challenges

Toward 2030, Japanese consumer cooperatives will strive to practice the commitments pledged in the Co-op Action Plan for SDGs and work toward the realization of the goals set in the Consumer Co-op 2030 Environmental Sustainability Policy.

However, with the rapid development surrounding climate change in Japan and overseas, the situations have been changing since consumer cooperatives established the goal of a 40% reduction compared to 2013. In the Climate Change Adaptation Plan approved by the Cabinet in October 2021, the Japanese government pledged that by 2050, Japan would aim to reduce greenhouse gas emissions to net-zero, that is, to reach carbon neutrality. To realize this goal, it also declared that Japan would target a 46% cut in greenhouse gas emissions by 2030 from 2013 levels and continue to strive toward the higher goal of 50%. In response, we will consider raising our reduction target.



### Agrivoltaic Systems at Farms Operated by Co-op Kobe

Moreover, to further reduce CO2 emissions, JCCU and its member cooperatives recognize the importance of doing so throughout the supply chain of consumer cooperatives' businesses, as described in the Action Guidelines of the Consumer Co-op 2030 Environmental Sustainability Policy. Although we have not moved into action yet, we will begin calculating emissions throughout the supply chain within the next few years. We are also looking into the possibility of organizing a sustainability promotion campaign for individual members, similar to the one conducted in 2010, but in a way that fits the modern age. We will seek to contribute to cutting CO2 emissions in members' daily lives by encouraging them to take action against climate change and proposing reduction measures.

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#### End notes:

[i] The mission is stated in the Ideal of Japanese Consumer Co-ops Movement for the 21st Century, which the JCCU and its member co-ops formulated in 1997.

[ii] It is a concept of stores that reduce CO2 emissions by 20% by installing energy-saving equipment and improving operations compared to stores with energy-saving measures in 2005. It was formulated in 2009.

[iii] It was not possible to choose an electric power company and use renewable energy until 2015 in Japan.

[iv] Although the JCCU has put Carbon Footprint of Product (CFP) marks on over 100 private brand products, it plans to remove the marks in the future. The reason is that food products and daily necessities with CFP marks haven't been widespread in Japan, and that it is difficult for consumers to understand and compare the amount of CO2 emissions, thus making it difficult to motivate them to purchase items with the marks.

[v] The total electricity used by consumer co-ops (56 community-based retail co-ops) is approximately 1.2 billion kWh.



## 6. A Movement to Reduce Plastic Straws on Campus by Students at Chiba University Coop, Japan

By: National Federation of University Co-operative Associations (NFUCA) Student Committee, Japan

According to Japan's Plastic Waste Management Institute, Japan used 9.63 million tons of plastic in 2020, of which 8.22 million tons went to waste. A 2018 report issued by the Ocean Conservancy, a nonprofit environmental advocacy group, stated that plastic straws and stirrers account for about 5.96% of the top-ten items collected in coastal zones of Japan during an initiative called the 'International Coastal Cleanup'. As oceans cover 70 per cent of the Earth's surface and we rely on them for food, energy and water, protecting the oceans is a vital task.

To contribute to SDG 14: Life Below Water, Chiba University Student Committee for Environmental Management System and Chiba University Cooperative have launched a campaign to reduce plastic straws in cooperative stores with an aim at raising environmental awareness among students and faculty.

Around 30,000 plastic straws per year were used by Chiba University Cooperative before the COVID-19 pandemic. The cooperative provided a free plastic straw for every purchase of a 500 ml beverage glass.

The Plastic Straw Reduction Project by students kicked off in 2019. The Student Committee for Environmental Management System, whose activities have received recognition both in Japan and abroad, studied the idea of chargeable straws instead of free ones. In July 2019, together with Chiba University Cooperative, they conducted an experiment to cease the distribution of plastic straws and charge additional money for the purchase of paper straws. Even though the experiment reduced the rate of straw use by half, concerns remained about the user-friendliness of paper straws.



Poster for Plastic Straw Reduction Project



In 2020, members of the Student Committee for Environmental Management System compared several materials, including bamboo, grass, paper, and biodegradable materials. Because of its environmental impact, durability, and hygiene, bamboo was chosen, which led to the next experiment.

In January 2022, Chiba University Cooperative stopped giving away plastic straws for free and started selling bamboo straws for five Yen at three cooperative stores in Nishi-Chiba Campus, hoping to implement the full-scale project in spring.

The results of the experiment were positive. There was much support for this project not only from cooperative members who use the stores daily but also from the university and other external groups.

However, there has been a pricing issue with the project, as each bamboo straw originally cost 16 Yen, compared to the selling price of 5 Yen. During the quest to search for more affordable non-plastic straws, UPay, a Fukuoka-based company, contacted the project members and introduced rice straws that they have developed. These rice straws were colourful, durable, and eco-friendly, making them stand out compared to other alternatives.

These rice straws are plant-based (70% rice, 30% cornstarch, no additives, with confectionery food colors), which can be recycled for use as livestock feed, plant fertilizer, or foodstuff. These straws can also be boiled and eaten. The rice straws have obtained FSSC 22000 certification for food safety management systems.



### **First day of demonstration experiment to introduce bamboo straws at three co-op stores in Nishi-Chiba Campus**

After much thought and deliberation, the Chiba University Student Committee and Chiba University Cooperative decided to use rice straws for the current Plastic Straw Reduction Project. The full-scale project of introducing rice straws in university cooperative stores in the Nishi-Chiba Campus, Matsudo Campus and Inohana Campus started on June 13, 2022.

We hope that students, faculty, and staff will be more aware of environmental issues while reducing the use of plastic to prevent marine pollution. We believe that every small contribution counts toward making cleaner oceans and protecting marine life.

## About the Committee and Project

### About the Current Plastic Straw Reduction Project

- **Period:** Started on Monday, June 13, 2022
- **Location:** Chiba University Co-operative stores in Nishi-Chiba Campus, Matsudo Campus and Inohana Campus
- **Initiative:** Ceasing the distribution of plastic straws and charging for rice straws (5 yen each)

### About Student Committee for Environmental Management System

- **Established in** 2003
- **Number of members:** Around 300 students each year
- **Activities:** Implementing awareness-raising activities to reduce environmental burdens, environmental education activities for elementary, junior high, and kindergarten students, greening and composting activities, and the creation of eco-goods

### About Chiba University Co-operative

- **Established on** June 24, 1965
- **Number of members:** Around 12,500 members
- **Business activities:** General stores, bookstores, dining halls, etc.

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# 7. China Coop Promotes Green Development

**By: All China Federation of Supply and Marketing Cooperatives**

The progression of ecological civilization is fundamental for China's sustainable development. During the "14th Five-Year Plan" period, China's ecological civilization construction entered a critical period with a focus on the reduction of pollution and carbon emissions, serving for the comprehensive green transformation of economic and social development.

Guided by the concept of Green Development, China CO-OP exerts an influence on its network and industrial chain nationwide to contribute to green development. As the exclusively-invested enterprise of China CO-OP Group, China National Agricultural Means of Production Group Corporation (CNAMPGC, commonly known as Sino-Agri Group) takes lead in marching towards the "green path", strengthening scientific and technological innovation and promoting emission reduction for sustainable agricultural development.

For that purpose, Sino-Agri Group and its subsidiaries have taken concrete measures mainly in three areas: supply of agricultural materials, utilization of livestock and poultry manure and straw, and management of agricultural film.

## **Supply of Agricultural Materials**

By providing "soil testing, fertilizing, return visits, and yield testing" and other services, CNAMPGC Holding Limited Corporation has established planting files and soil databases in some areas to help small farmers optimize fertilization and increase yields. From 2018 to 2020, a total of 28,500 soil testing services were provided, and 51,000 tons of formula fertilizers were supplied, helping farmers save 4-15% of inputs, increase production by 8-15%, and save more than 50% of water. CNAMPGC Holding promotes green agricultural materials such as liquid fertilizer and bacterial fertilizer to help reduce the use of fertilizers and increase efficiency.



**Cooperation with universities for new product R&D**



The sino-Agri pesticide section actively introduces green and safe pesticides and pest control technology to boost the quality and safety of products. Formulation R&D and pesticide creation centers have been established. Efforts have also been made in the industrialization of patented products to provide scientific and technological support for the sustainable development of agriculture.

### **Utilization of Manure and Straw**

Agricultural wastes such as livestock and poultry manure and straw pose a hindrance in agricultural non-point source pollution control. Proper utilization of these wastes is an important measure for carbon peaking and carbon neutrality goals. Compost is a green fertilizer made from a mixture of straw and manure after fermentation. For arable land using compost, the use of chemical fertilizers is reduced by about 10% per mu (1 hectare = 15 mu).

### **Management of Agricultural Film**

Exploration has been carried out in the innovative management of agricultural film. The used mulch film has been cleaned, re-granulated and applied to the production of drip irrigation tapes. The tape can also be cleaned and reused multiple times. While reducing pollution caused the waste film, it realizes the recycling of resources. The test programs for degradable mulch have also been carried out in many areas.

### **SAL Crop Health Marketing Department**

Crop Health Marketing Department of Sino-Agri Leading Biosciences Co., Ltd is an agricultural service team of more than 500 professional plant protection technicians, and the number of young people accounts for 80%.



### **Crop Health Marketing Team**

The team has been rooted in fields all year round, with technical services as the core, focusing on the needs of farmers, providing high-quality and environmental-friendly agrochemical products, as well as professional plant protection technology and comprehensive planting services, to solve difficulties and pain points encountered by farmers in production.

### **Company Profile**

China National Agricultural Means of Production Group Corporation (Sino-Agri Group) is a nationwide large-scale enterprise group which integrates production, distribution and service as well as specializes in the agricultural means of production, such as chemical fertilizer, pesticides, agricultural film, seeds, and agricultural machinery, among others. It is an exclusively-invested enterprise of China CO-OP Group.

Sino-Agri Leading Biosciences Co., Ltd. (SAL) is a subsidiary of the Sino-Agri Group. It is a household name in China not only for the farmers but also throughout the agrochemical distribution chain as the No.1 agrochemical supplier in China supporting agriculture growth from 1950 till the present.

# 8. Climate Change Mitigation Policies in India & IFFCO's Initiatives

**By: Ms. Sri Laxmi, Junior Field Representative, Indian Farmers Fertilizer Cooperative Ltd. (IFFCO)**

## **Introduction**

The United Nations defines climate change as long-term shifts in temperatures and weather patterns. These shifts may be natural, such as through variations in the solar cycle but after the industrial revolution in the 1800s, human activities have been the major driving force responsible for climate change, primarily due to burning fossil fuels like coal, oil and gas which emits greenhouse gases (GHG) that act like a blanket wrapped around the Earth's atmosphere, trapping the sun's heat and raising temperatures. Increased GHG concentration in the atmosphere causes global warming. Major greenhouse gas emissions that are causing climate change are carbon dioxide and methane. Energy, industry, transport, buildings, agriculture and land use are among the main emitters of GHGs.

As gas emissions are continuously increasing, the earth's temperature is now about 1.1°C warmer than it was in the late 1800s. The global average temperature is expected to reach or exceed 1.5 °C within the next few decades. These changes will affect all regions of Earth and its consequences include intense droughts and heat waves, water scarcity, severe fires, rising sea levels, flooding, melting polar ice, catastrophic storms and declining biodiversity etc.

## **Sector-wise GHG emission in India**

India's 3rd Biennial Update Report by the Ministry of Environment, Forest and Climate Change, Government of India, submitted in 2021 to the United Nations Framework Convention on Climate Change, the energy sector contributes the highest and the agriculture sector the 3rd highest, to the GHG emission measured in Gigagram CO<sub>2</sub> equivalent.



**Industries causing GHG Emissions**

**With increasing gas emissions, the earth's temperature is now about 1.1°C warmer than it was in the late 1800s.**

The energy sector comprises emissions from energy industries, manufacturing and construction, transport, other sectors, solid fuels (fugitive emission) oil and natural gas (fugitive emission). Among the major contributors to the energy sector, the fertilizer industry, which comes under the sub-category manufacturing and construction, contributes 13.49% of emissions. Emission data obtained from different sectors shows that the agriculture sector contributes fairly well to GHG emissions whereas amongst the industrial sector fertilizer industry has been identified as energy-intensive as well as responsible for contributing 34% in GHG emissions.

### India's policy to mitigate climate change

To avert the climate change crisis, National Action Plan on Climate Change (NAPCC) was launched in 2008. It outlines a national strategy that aims to enable the country to adapt to climate change and enhance the ecological sustainability of India's development path. NAPCC encompasses a range of measures. It focuses on eight missions, which are as follows:

**Table 2: Missions of National Action Plan on Climate Change (NAPCC)**

Missions of the National Action Plan on Climate Change	Objective
National Solar Mission	to install 20 GW of solar power by 2022
National Mission for Enhanced Energy Efficiency	10,000 MW of energy savings by the end of the 11th FYP in 2012
National Mission on Sustainable Habitat	Development of sustainable habitat standards, Preparation of city development plans that comprehensively address adaptation and mitigation concerns, Preparation of comprehensive mobility plans that enable cities to undertake long-term, energy-efficient and cost-effective transport planning and Capacity building
National Water Mission	Comprehensive water database in the public domain and assessment of the impact of climate change on water resources, Promotion of citizen and state actions for water conservation, augmentation and preservation, increasing water use efficiency by 20 per cent and Promotion of basin level integrated water resources management
National Mission for Sustaining the Himalayan Eco-system	Addressing issues such as Himalayan Glaciers and the associated hydrological consequences, Traditional knowledge societies and their livelihood, Biodiversity and Wildlife conservation and protection and planning for sustaining the Himalayan Ecosystem
National Mission for a Green India	Increased forest/tree cover on 5 m ha of forest/non-forest lands and improved quality of forest cover on another 5

### **IFFCO's initiatives in mitigating climate change crisis**

IFFCO, a multi-unit cooperative society registered in 1967 under the Bombay Cooperative Societies Act, is involved in the manufacturing and marketing of fertilizer, agrochemicals and allied products/by-products, undertakes research and such other activities as are incidental and conducive to the development of industries, promotional and extension activities for farmers etc. To mitigate the global climate change crisis, IFFCO has adopted several practices in the manufacturing sector as well as on the agricultural front.

**In the fertilizer manufacturing sector:** specific energy consumption by the industry is reduced by replacing old technology and implementing a new one. The energy-saving project was implemented in phases in the ammonia plant at Kalol, Gujarat which resulted in a net energy saving of 0.837 Gcal/T of ammonia.

The energy-saving project adopted in both ammonia and urea plant leads to the saving of 0.365 Gcal/T of ammonia and 0.297 Gcal/T of Urea. Similar energy-saving projects were also undertaken in other plants of IFFCO to minimise the specific energy consumption per MT of Urea produced. At IFFCO plant Phulpur, Uttar Pradesh has installed a CO<sub>2</sub> recovery unit with a capacity of 450 MTPD making IFFCO amongst the first to adopt this technology to recover CO<sub>2</sub> from the primary reformer exhaust flue gas in the Urea industry.

Recent development in Nano fertilisers will further resolve this energy-intensive fertiliser manufacturing process.

**In the agriculture sector:** IFFCO recognizes its ethical responsibility to protect the environment and is committed to regulating all its activities using the best available technology to mitigate climate change. To increase water use efficiency and reduce the amount of water required for irrigation purposes, IFFCO in tandem with the Govt. of India had installed more than 4500 drip fertigation units in Gujarat, Karnataka, Maharashtra, Madhya Pradesh and Rajasthan. The drip irrigation technique has the potential to save up to 70% of irrigation water as well as 25% of chemical fertilizers.



**IFFCO's Nano Urea Liquid  
(Picture Credit: IFFCO, India)**

For providing clean gaseous fuel for cooking and lighting, and improving sanitation in villages and semi-urban areas, financial assistance for the installation of more than 350 biogas units was given to villagers of Chhattisgarh, Madhya Pradesh and Maharashtra. This was done in tandem with the government's "National Biogas and Manure Management Programme". Digested slurry from biogas plants is further used as enriched bio-manure to supplement the use of chemical fertilizers.



Several other dairy cooperatives are also engaged in promoting and installing biogas.

As part of IFFCO's Model Village Scheme, remote villages of the country having the least availability of resources were adopted. Besides several extension activities for educating and creating awareness amongst villagers' sustainable agricultural developmental activities such as setting up compost units, integrated nutrient management, soil test-based fertilizer recommendation, green manuring, promoting SRI method of rice cultivation, solar lights etc. were undertaken in model villages. Such model villages further encouraged the farmers of the adjoining villages to adopt the advanced agricultural practices of model villages.



**IFFCO's Village Adoption Programs  
(Picture Credit: IFFCO, India)**

IFFCO works on several areas which encompass soil, water, energy saving technology, efficient agricultural practices etc. to ensure maximum benefits for all sustainably.



# 9. Video Interview: Weather Protect Insurance for Cooperatives in the Philippines

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In the Philippines, CLIMBS Life and General Insurance Cooperative (CLIMBS) understands the need for cooperatives to heed the call to contribute resources and efforts to combat climate change. Therefore, CLIMBS has introduced the Enhanced Weather Protect Insurance, to help those affected by natural disasters cope and to assist cooperatives in managing possible losses brought on by such events.

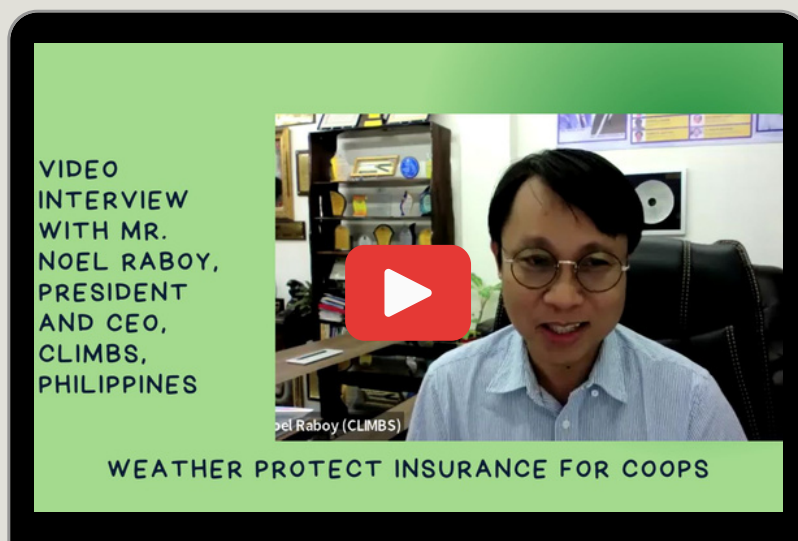
This Agri Insurance is in partnership with like-minded cooperatives and organizations; from the international sector: The International Cooperative and Mutual Insurance Federation (ICMIF), IBISA Network, Alliance of Bioversity International and CIAT (International Center for Tropical Agriculture), and Global Parametrics. Five pioneering cooperatives that have


remained steadfast since day one are Oro Integrated Cooperative (OIC), Mindanao Consolidated Cooperative Bank (MCCB), Paglaum Multi-Purpose Cooperative (PMPC), Metro Ormoc Community Multi-Purpose Cooperative (OCCCI), and The Philippine Family Farmers Agriculture-Fishery-Forestry Cooperative Federation (AgriCOOPh).

This enhanced Weather Protect Insurance is an innovative solution using blockchain technology with smart agriculture to help build resilience and sustainability among our farmers and agripreneurs.

We interviewed Mr. Noel Raboy, President & CEO of CLIMBS to know more about their product - Enhanced Weather Protect Insurance and how it is contributing to UN SDGs.

**Watch the Interview here**





Mr. Raboy explained how every year the Philippines experiences about 20 tropical storms and some of which are very destructive. Many Filipinos are affected including the livelihoods of farmers and agripreneurs who are totally vulnerable and at risk when it comes to natural calamities. While the government and private sectors do have some protection measures, the situation is still challenging. CLIMBS has partnered with the government to help reduce the insurance premium with government subsidies and is able to provide insurance coverage to its member cooperatives.

Using blockchain technology and readily available data, CLIMBS insures the agriculture portfolio of its member cooperatives, which in turn, provides benefits to individual farmers. The model works on the values of solidarity, equity, and self-help.

The satellite-based portal issues alerts for any natural calamity and cooperatives get the claim sanctioned within 10 days of the calamity without having to submit any proof or documentation. Members have access to a 24\*7 dashboard that enables them to track their loan portfolios, get updates on smart farming, and instant responses to their queries. The multistakeholder partnerships have brought in diverse knowledge and synergy by combining the fields of science, insurance, and technology. This initiative is CLIMBS' contribution to #Coops2030 in addressing the UN Sustainable Development Goals (SDGs) nos. 1: No Poverty, 2: Zero Hunger, 9: Industry, Innovation and Infrastructure, 12: Responsible Consumption and Production, 13: Climate Action and 17: Partnership for the Goals.

CLIMBS's commitment is to Insure 20 Million Lives by 2024 and Embody the Cooperative Values and Principles”.

# 10. Innovations in Clean Energy and Water Resources are Making Communities Resilient in Palestine

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## Introduction

The Economic and Social Development Center (ESDC), Palestine works in areas classified as C to provide farmers with the best needs that enhance their resilience. For ESDC, 2022 is the year of clean energy through optimal exploitation and recycling of resources. This was carried out through solar power plants, mobile water pumps that operate on solar energy, bio-digester for gas and fertilizer production, wastewater purification plants and reuse in agriculture, and reducing salinity in irrigation water.

Most of their projects were implemented in the Jericho area, and some in the Ramallah and Al-Bireh areas. Here they introduced solar “photovoltaic” (PV) energy production and other electrical power features. The PV projects aimed to reduce the cost of fresh and manufactured agricultural

production and to support Palestinian citizens in building a resilient economy. They also carried out multiple agricultural projects such as fish raising ponds for farmers, a fish hatchery project and planting Pancium as animal fodder in the Arab Development Association (ADS), a bio-digester at the Abbasiya farm in Al-Nuweima- Jericho, and a project to manufacture “Huwerneh” for a woman cooperative

ESDC established a purification plant in Kharas with a production capacity of 500 cubic meters per day. The plant used modern technology with Palestinian engineering design and Palestinian supervision and implementation. The old, idle station, which constituted a health hazard for the neighbouring residents, and caused many diseases in the area, was moved.

**The ESDC worked in areas classified as C to provide farmers with the best needs that enhance their resilience.**



**Solar Panels Installation by ESDC**

Some of the other clean and renewable energy initiatives (solar energy and gas production):

1. Installation of solar power units to cover the electricity needs of wells used by farmers and to cover the electrical energy needs of the wastewater purification plant.
2. Mobile solar pumps which were made more lightweight (17 kg) and more efficient. 25 pumps were distributed to 10 local councils and various representative bodies to benefit more than 200 farmers.
3. Installation of solar energy systems to reduce operating costs at Bzarya Women's Cooperative, Tubas Women's Cooperative, Arab Construction Project Association, and the Fishermen's Syndicate.
4. Solar systems with a capacity of 273 kilowatts were installed through a project of the United Nations Development Program to cover the needs of farmers.
5. Establishment of a bio-digester with a volume of 40 cubic meters in the Jericho area.

### **Solar Energy Projects**

ESDC designed and installed solar systems for food processing and consumer cooperatives that need a large quantity of electricity to operate their machines, ovens, refrigerators, and freezers.

Solar systems are necessary since they are a source of clean energy and reduce the cost of electricity which in turn increases the economic feasibility of projects. In 2021, ESDC installed a total capacity of 433 KW and produced 857 megawatts of electricity. There are significant environmental dimensions to the project. Solar panels replace traditional sources and reduce carbon



**ESDC Team Evaluating the Solar Power Units**

dioxide gas emissions by 619 tons per year. CO<sub>2</sub> emissions are calculated based on the actual input source of the Israeli power plants where natural gas is the main fuel used to generate energy.

The solar project benefitted farmers' groups in Jericho and other West Bank areas, and communities in the Ramallah area near Biet Eil Settlement and Bilien village next to the separation wall. These farms use electrical energy for water pumping, aeration of fishponds, and Huwernieh product processing. The solar units help to enhance the resilience of Palestinian farmers by ensuring free solar energy and reducing electricity bills and the cost of agricultural products. This helped the farmers to be more competitive in their prices.

The project helped families living in settlements and near the Wall, by reducing their electricity bills, enabling them to use more electrical appliances, ensuring night lighting for children's play areas near the Wall, and enhancing the access of Palestinian women farmers to agricultural lands adjacent to the separation wall in classified areas (C).





In a separate initiative, 25 solar-powered mobile pumps were developed for well owners whose wells are in remote areas. The pumps make it easier for farmers to use the collected rainwater for their crops.

Within ESDC interventions, a total solar energy capacity of 575 kWh of energy is produced annually = 1154 megawatts (2021).

**Desalination of Water via Electromagnetic Ionizer**

The groundwater irrigation in the Jordan Valley and Jericho region in Palestine suffers from high salinity, which is steadily increasing due to climate change. To overcome this problem negatively affecting agriculture, ESDC has used the magnetic cultivation technique by installing and operating an Electromagnetic Ionizer at Al-Abbasiya artesian well of 110m<sup>3</sup>/ hr capacity and ms=3700. It helps to overcome the problem of salinity of irrigation water and improves the possibility of growing more crops increases.

The device generates a strong magnetic around the water through the wall of irrigation water pipes, which affects the natural and chemical properties of water and changes it for the better. Some of the advantages of using magnetized water are:

- Neutralization of the harmful effect of sodium chloride on plants, which improves their growth
- Prevention of lime deposits inside the irrigation pipes, which leads to an increase in their efficiency
- Increased seed germination rates



**Farmer with his produce after using the Electromagnetic Ionizer**

- Increase in the soil's water retention, which helps the overall growth of the plant, increases the efficiency of irrigation and reduces the amount of irrigation by about 30%
- Increased fertilizer efficiency, which means lower costs and easier to absorb the fertilizer
- Increased oxygen in the soil, which improves the efficiency of root growth.

Mr. Abu Abdallah, a farmer, after two farming seasons, noticed that with the use of the ionizer device, the consumption of one agriculture dunum has become about 30 cups, which is less than half the amount of water that was used before. Another farmer, Mr. Abu Khalil, mentioned that there were very impressive results in the improvement of the germination level and an increase in the vegetable productivity of mallow, zucchini, and citrus fruits. As for the animal side, the rate of production reached 100%. It reduced the incidence of kidney failure, due to which the mortality rate of chickens was very high earlier.



## Wastewater Treatment and Reuse System

For the first time, ESDC established a wastewater purification plant in Kharas. The old, idle station, which constituted a health hazard for the population and threatened their public health, was cancelled. They also constructed a 3.2 km wastewater transmission line from the beginning of the country to the site of the new station. This led to the closure of the large torrent of sewage that damaged agricultural lands. The station which has a capacity of 500 cups per day, is operating at 60% capacity and reached about 5,500 people.

The area of agricultural land that will be irrigated by the treated water from the plant is approximately 1,500 dunums. A conveyor line for treated water to reach the farms has been built. In addition, the water will also be used to supply water to trees along the agricultural land.

ESDC has constructed the wastewater treatment unit in Kharas/Hebron/West Bank/Palestine, implemented within the project "Promoting Inclusive Agricultural Growth to Ensure Improving the Standard of Living and Strengthening the Capacities of Vulnerable Communities in Areas Classified C" with the support of the European Union. The unit is implemented by Oxfam and ESDC in cooperation with the Kharas Municipality and the Ministry of Agriculture.

The wastewater treatment system is designed with a capacity of 500 cubic meters per day to cover the population growth over the next ten years.



**Wastewater Treatment Unit**

The treated water will be used to irrigate crops in line with the standards of the Water Authority and the Ministry of Agriculture and according to the results of the necessary laboratory tests. The station uses advanced technologies to treat sewage that comes from the town's sewage network and works by a mechanism to reduce odours coming from the station and reduce its impact on the surrounding environment. The unit will produce high-quality treated water conforming to international standards for use in irrigating agricultural lands.

The ESDC is moving steadily towards increasing its contributions to the clean energy sector due to its high results, as these interventions sought ways to enhance the resilience of our farmers in diverse geographical areas.

# 11. COOP Dialogue 4 - Call for Articles

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## Theme: Cooperatives' Contribution to SDGs: Achievements and Way Forward

2023 marks the mid-point of the implementation of the 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs). In 2015, the Heads of State and Government and High Representatives, meeting at the United Nations signed on to the Transforming our World Agenda that set a course to eradicate poverty, protect the planet and ensure prosperity for all by 2030. The UN will carry out the second SDG Summit in September 2023 to review the state of the SDGs and provide high-level guidance on actions leading up to the target year of 2030 for achieving the SDGs.

Cooperatives are recognized as important partners to achieve the SDGs, because they promote democracy, enhance income, foster social inclusion, care for the environment, and have a significant economic impact on the economy. Self-help and empowerment, enhancing local resources and capacities and reinvesting surpluses guide cooperatives to respond to local community needs and objectives. Cooperative enterprises support and promote a vision of Sustainable Development based on a triple bottom line approach: economic, social, and environmental.

Cooperatives across the Asia-Pacific region are actively involved in the implementation of the SDGs. The work of cooperatives cuts across all the SDGs given the diverse sectors in which cooperatives operate - agriculture, banking and credit, consumer, health, work etc. The efforts by cooperatives have been recognized and are reflected in national SDG plans and in the Voluntary National Reviews of many countries.

COOP Dialogue 4 with the theme "Cooperatives' Contribution to SDGs: Achievements and Way Forward" will cover the work carried out by cooperatives in implementing the SDGs at the regional, national, and local level. It will showcase specific examples of the actions taken to increase awareness about SDGs and towards the achievement of SDG indicators.

ICA-AP Regional Office invites articles, research papers, opinions, case studies, stories, and short video stories from anyone interested in cooperatives and SDGs from the Asia and Pacific region. You may use this platform to publicise your work, enhance your visibility, and communicate your best practices and views with diverse stakeholders. Please follow the guidelines given below to submit your contribution.



## Submission Guidelines

- Submission of interest and abstract (300 words) latest by January 31, 2023.
- Submission of complete written material in word format along with pictures (in not more than 1,500 words excluding references and pictures in .jpg/ .jpeg/ .png formats of size between 500 Kb and 5 Mb) latest by February 28, 2023. The articles can also include hyperlinks to additional information, documents, or videos.
- Submission of complete videos of 3-5 minutes (in format .mp4 and max size 500 Mb) latest by February 28, 2023.
- Language: English

For any queries, please contact the COOP Dialogue team at [coopdialogue@icaap.coop](mailto:coopdialogue@icaap.coop).





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