Mekong–ROK
Cooperation Fund

STORIES OF CHANGE

From the Mekong-Republic of Korea
Cooperation Fund (MKCF) Projects
2013-2025

INTRODUCTION

Established in 2013, the Mekong–Republic of Korea Cooperation Fund (MKCF) was created to strengthen collaboration between the Republic of Korea (ROK) and the five Mekong countries—Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam. Administered by the Mekong Institute (MI), the Fund supports projects that foster regional connectivity, advance sustainable development, and promote meaningful exchanges among institutions and communities across the subregion.

Over the past decade, MKCF has supported a broad spectrum of initiatives—from environmental protection and digital innovation to cultural preservation, agricultural improvement, and rural infrastructure. While the focus areas are diverse, each project shares a common goal: to respond to local needs with practical, scalable solutions that generate long-term benefits.

This booklet, Stories of Change, captures how these efforts are making a difference on the ground. Through firsthand accounts, we hear from farmers, educators, government officials, and young leaders whose lives and work have been shaped by MKCF-supported initiatives. Their experiences offer a window into how regional cooperation is not only driving progress—but also empowering people, building resilience, and laying the groundwork for more inclusive and sustainable development across the Mekong.

MEKONG INSTITUTE

Mekong Institute
123 Mittraphap Road Muang District
Khon Kaen 40002 Thailand
+66 (0) 43 202 411 to 2
information@mekonginstitute.org
www.mekonginstitute.org

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We are also grateful to the project implementers, partner institutions, and national focal points across the Mekong countries and the ROK, whose expertise and collaboration have been central to the success of these initiatives. Their efforts have helped transform ideas into action and aspirations into measurable impact.

Most importantly, we thank the individuals and communities who opened their homes, shared their stories, and brought these pages to life. Their lived experiences speak to the value of development that is grounded in context, led by communities, and driven by partnership. These stories are a testament to what regional cooperation can achieve when it is responsive, inclusive, and people-focused.

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STORIES OF CHANGE

REIMAGINING TOURISM: SUPPORTING HERITAGE CITIES THROUGH SMART SOLUTIONS

In the wake of years-long pandemic lockdowns, the world witnessed a surge in what came to be known as "revenge travel"—a collective rush to make up for lost time, experiences, and freedom. As connectivity and mobility continue to improve across regions, tourism in 2024 has already surpassed pre-pandemic levels, reflecting how people are embracing the chance to explore the world with a renewed sense of appreciation.

For the heritage cities of Ayutthaya, Siem Reap, Luang Prabang, Bagan, and Hue, however, this rebound is more than just a welcome trend—it is a lifeline. These culturally rich destinations, located across four Mekong countries, rely heavily on tourism to support local economies, sustain livelihoods, and preserve their historical landmarks. When the global health crisis struck, it brought not just a pause, but a reckoning for these communities.

Yet amid the disruption, the region charted a new path—by going digital, going green, and going forward together. From 2020 to 2023, the Mekong Institute (MI), with support from the Mekong–Republic of Korea Cooperation Fund (MKCF), implemented the Sustainable and Smart Tourism Development in the Mekong Region project. Anchored in innovation and collaboration, the project served both as a recovery strategy and a blueprint for the future. It aimed not only to restart tourism, but to reimagine it—making it more resilient, responsible, and aligned with the digital age.

The project was built on three interconnected components: facilitating smart tourism development, Korea–Mekong hospitality training and mentoring, and twinning historical and cultural towns. Together, these elements enabled Mekong countries to explore digital tools, strengthen human resource capacity, and build lasting connections with the Republic of Korea (RoK)—especially between heritage cities that share deep cultural and historical roots.

Connecting cultures

A standout achievement of the project was the twinning of cultural towns between the Mekong region and RoK—pairing Ayutthaya, Siem Reap, and Luang Prabang with Seoul and Jeonju. These partnerships created avenues for exchanging sustainable tourism solutions, digital innovations, and cultural experiences.

The partnerships were formalized through three Memoranda of Understanding (MOU) signed during the international exchange program Heritage Connections: Promoting Sustainable and Smart Tourism in the Heritage Cities of Mekong and RoK, held in Seoul in June 2023. These agreements pledged collaboration on a wide range of initiatives, from joint marketing and youth programs to digital storytelling and responsible tourism education. Academic institutions also came on board, laying the foundation for future internships, dual degree programs, and research collaborations.

Going digital

At the heart of this transformation was technology. A mobile app and web platform were launched to provide real-time information about the five heritage cities, offering tourists curated experiences and access to local services. These tools also empowered small tourism businesses with data-driven insights to enhance their services and decision-making.

Complementing these efforts was a comprehensive website featuring country profiles, city guides, and up-to-date information—serving as a digital gateway for travelers interested in meaningful, sustainable experiences. The Mekong Sustainable Tourism Guidebook – Make Your Mekong emerged as a key resource for visitors seeking authentic, responsible travel.

Meanwhile, the project's social media channels—on Facebook, Instagram, and Naver Blog—brought Mekong stories to a global audience. With engaging visuals, influencer partnerships, and SEO-friendly content, the initiative successfully connected the region's rich culture with the interests of a new generation of travelers.

Celebrating local identity

The roadshows held in all five heritage cities further strengthened this momentum. Designed to build local pride and spark sustainable growth, the events offered a platform for exchanging insights and best practices in smart tourism. Public and private stakeholders came together to share experiences and explore opportunities for collaboration tailored to each city's unique context.

Beyond discussions, the roadshows celebrated local identity—featuring exhibitions, live demonstrations, traditional music, performances, photo contests, and videography. These activities not only showcased the vibrancy of each city's heritage but also deepened community engagement. In doing so, the roadshows laid the groundwork for more inclusive, locally rooted tourism development.

In a world reshaped by uncertainty, the Mekong region has chosen to lead with connection, sustainability, and innovation. It has not just rebuilt its tourism industry—it has redefined it. At a time when travelers seek authenticity, safety, and meaningful experiences, the project has spotlighted the region's most valuable assets: its stories, its people, and its heritage.

Priority Sector: Culture and Tourism
Duration: 2020/05/01 - 2023/05/01

MKCF CALL 3

Sustainable Smart Tourism Development in the Mekong Region Project

Country of Implementation:
Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and ROK

Contact

Mr. Madhurjya Kumar Dutta
Director
Trade and Investment Facilitation Department
Mekong Institute
Thailand
Email: dutta@mekonginstitute.org

Keywords

#SUSTAINABLE TOURISM
#SMART TOURISM
#MEKONG HERITAGE
#GREEN TOURIAM

CULTURAL MEMORY: SAFEGUARDING TRADITION THROUGH FILMMAKING

Hegemonization is real. Despite growing global calls for diversity, strong Western influence—particularly that of Hollywood—continues to overshadow local cultures. In the Mekong region, the traditions and arts of six interconnected countries are increasingly at risk, not only due to globalization, but also because of greater digital connectivity and the rapid pace of technological change.

Mindful of the region's rich and diverse cultural heritage, the National University of Arts and Culture in Yangon, with support from the Mekong-Republic of Korea Cooperation Fund (MKCF), sought to counter hegemonization by embarking on a mission to preserve traditional games and foods through documentary films. Launched in February 2024, the initiative—called the *Mekong Creative Film Festival (MCFF) 2024*—was designed to preserve cultural memory, empower youth, and build regional solidarity through creative storytelling.

Banking on the youth

From its earliest stages, the project placed strong emphasis on youth participation and cross-cultural collaboration. In March 2024, experts from Myanmar and the Republic of Korea joined the initiative, serving as mentors and cultural mediators. They provided both technical guidance and cultural insights, helping first-time filmmakers grasp the deeper significance of the stories they set out to tell. This mentorship was vital in building the participants' confidence and enhancing the quality of their initial film submissions.

By April, the project had shifted from internal planning to public engagement. A branding pre-meeting brought together students, artists, and communication professionals to co-create the festival's poster and promotional video—an early milestone in participatory design and intergenerational collaboration. A strategic outreach campaign followed, combining traditional tools like billboards and flyers with digital platforms such as Facebook, Telegram, and YouTube. This dual approach allowed the project to reach ministries and universities across the Mekong-ROK region while also driving youth-centered engagement online.

Between April and May 2024, the first round of documentary submissions arrived. Five films from Myanmar, Viet Nam, and Thailand showcased traditional games and food practices that are rarely featured in mainstream media. These documentaries, many crafted by youth with no prior filmmaking experience, became powerful community storytelling tools. Screened locally and distributed online, the films are now part of an emerging archive that supports both education and cultural preservation.

To ensure the sustainability and wider impact of the project, MCFF was structured around three core activities. The first was the Pre-Documentary Film Incubator Workshop, held in Yangon on 16 September 2024. This brought together twelve external consultants from across the Mekong-ROK countries to build a regional filmmaking network and align on methodologies for training youth. Discussions focused on how documentary film can serve as a vehicle for preserving traditional knowledge while remaining accessible and relevant to younger audiences.

The second activity involved Documentary Film Incubator Workshops held between October and November 2024 across five Mekong countries. In each country, two national consultants provided hands-on training in scripting, fieldwork, and editing. These workshops enabled participants to create original documentaries grounded in local cultural practices, further expanding the project's cross-border reach and depth.

The third and culminating activity was the Mekong Creative Film Festival, held from 18 to 20 February 2025 in Yangon. Over three days, 48 youth and professionals came together to screen their films, participate in special lectures, and engage in cultural dialogue. A post-festival city tour added another layer of immersion, fostering deeper peer connections and cross-cultural appreciation.

Cultural exchange

As part of this broader effort, a cultural exchange workshop involving Thai and Myanmar youths was held in Bangkok in October 2024. Organized by the National University of Arts and Culture in partnership with the Thai Documentary Filmmakers Trade Association (TDFA) and Deep Doc Media, the event featured ten Myanmar students and eight Thai documentary teams. Participants competed in a documentary pitch session, shared traditional foods, played heritage games, and visited landmarks such as Wat Arun and the National Museum. These immersive activities gave Myanmar students firsthand exposure to Thai traditions and allowed all participants to explore both similarities and differences in their cultural heritage.

The workshop concluded with the Deep Doc Pitching 2024 competition. Among the winning entries was "Where Time Sings Softly" by Jittarin Wuthiphan, a film that explores how elderly communities in Bangkok adapt traditional games in modern urban life. Another standout was "Handmade Noodles" by Chinnapat Sukchanya, which documents one village's efforts to preserve the artisanal mee Phimai noodle-making tradition in the face of mechanization. Both films were showcased at MCFF 2024, giving Thai filmmakers an international platform to share their work.

The cumulative impact of the Mekong Creative Film Festival has been wide-reaching. It strengthened regional cooperation by building partnerships among ministries, universities, and film institutions across all six Mekong-ROK countries. It also contributed to the preservation of intangible cultural heritage through the creation of documentary films that now serve as archival and educational resources. Beyond technical training, the project empowered youth by giving them the skills and confidence to document their own cultures and stories. Lastly, it significantly increased the visibility of local cultures. A total of nine documentaries were screened during the festival and distributed online, where they received positive feedback from audiences, educators, and cultural experts.

What began as a response to cultural erosion has evolved into a vibrant movement for heritage preservation, youth empowerment, and regional solidarity. The MCFF not only documents traditions—it nurtures a generation committed to keeping them alive.

Priority Sector: Culture and Tourism

MKCF CALL 7

Documentary Film Festival (Traditional Games and Foods) Project

Country of Implementation: Myanmar
Duration: 2024/03/01 - 2025/02/28

Contact

Ms. Pa Pa Myo
Lecturer (Cinema and Drama)
National University of Arts and Culture
Yangon
Myanmar
Email: mapapamyo@gmail.com,
ygnnuac@gmail.com

Keywords

#TRADITIONAL
#FILM CULTURE
#SUSTAINABLE DEVELOPMENT
#CAPACITY BUILDING

FUTURE-PROOFED: UPSKILLING EDUCATORS TO MEET INDUSTRY 4.0 DEMANDS

In an age where machines learn, devices talk to each other, and drones fill the skies, Myanmar's vocational education sector made a decisive move not to be left behind. Faced with the sweeping tides of Industry 4.0—where artificial intelligence, the Internet of Things, and automation are redrawing the lines of work—the country took a bold leap forward. At the center of this transformation stood the School of Industrial Training and Education (SITE), under the Ministry of Science and Technology, which launched a two-year initiative to prepare its educators not just for today, but for a future already unfolding.

Backed by the MKCF and supported by partnerships with Korean institutions like KRIVET, Dong-A Meister High School, and Gyeonggi Mechanical Technical High School, the *Strengthening TVET Management and Upskilling TVET Personnel to Meet Industry Demand Reflecting IR 4.0* initiative was more than a project—it was a commitment to reinvention. SITE's newly established Future Technology Lab became the symbol of this promise: a sleek, modern hub outfitted with AI toolkits, Raspberry Pi devices, programmable logic controllers, and other tools of the new industrial age. It was here that over 60 TVET teachers from Myanmar and Viet Nam rolled up their sleeves, learning to decode data, automate systems, and bring machines to life through applied machine learning and IoT technologies.

But learning didn't stop at Myanmar's borders. A select group of teachers traveled to Korea's top-tier TVET institutions, spending six intensive weeks training to become master educators. When they returned, they didn't just bring back knowledge—they brought vision. Korean experts followed suit, coming to Myanmar to reinforce local training and support knowledge transfer. This blend of global exposure and local adaptation created a ripple effect, ensuring innovation didn't remain in labs but reached classrooms, workshops, and students across the country.

Aligning with real-world needs

The impact was immediate and measurable. Many teachers had entered the program with only basic exposure to emerging technologies; 80% had beginner-level skills in aerial flight control. Post-training, their practical competencies soared. SITE began to see stronger employment outcomes for its graduates, and feedback from trainees told the same story: 97% were satisfied with their new skills, and 96% found them aligned with real-world industry demands.

Knowledge-sharing became a pillar of sustainability. The project produced three comprehensive training manuals—on IoT, digital beauty therapy, and applied machine learning—now circulating through Government Technical Institutes and Colleges nationwide. Thousands of students and teachers are tapping into these resources, extending the project's reach far beyond its original cohort.

Meanwhile, change was taking root at the institutional level. With guidance from Korean experts, SITE, along with GTI Insein and GTI Shwe Pyi Thar, revamped their lab lmanagement and resource systems. The Department of Technical and Vocational Education and Training (DTVET) also formed a national working group to integrate AI and IoT modules into diploma and B.Tech curricula, laying the groundwork for long-term reform.

Building on

And the story continues. Energized by its success, SITE is preparing to launch short-term training programs in drone technologies and IoT, alongside a new diploma in Automation Technology. Partnerships with technological universities are opening doors to internships, while the Future Technology Lab continues to host hands-on sessions that spark innovation and curiosity among students.

In a region racing to keep pace with digital disruption, Myanmar's response stands out not just for its urgency but for its depth. This initiative didn't simply plug a skills gap—it helped redefine what vocational education can be. By betting on its educators and investing in the future, Myanmar has lit a path that other countries in the Mekong region can follow.

Priority Sector:
Human Resources Development

MKCF CALL 6
Strengthening TVET Management and Upskilling TVET Personnel to Meet Industry Demand Reflecting IR 4.0 Project

Country of Implementation:
Myanmar, Viet Nam, ROK

Duration: 2023/02/20 - 2025/02/20

Contact

Dr. Nay Zar Aung
School of Industrial Training and Education (SITE)
Myanmar
Email: site@dtve.org, nay1572@gmail.com,
nayzaraung1572@gmail.com

Keywords

#TUTURE TECHNOLOGY LAB
#TVET
#CAPACITY BULIDING
#AERIAL CONTRAL

BREAKING GROUND: PIONEERING GREEN PRACTICES IN THE CONSTRUCTION SECTOR

In post-COVID-19 Cambodia, rapid urbanization is driving demand for residential, commercial, and industrial developments. Landmark projects like Mekong Quay and Koh Norea are reshaping Phnom Penh into a modern urban hub, while Sihanoukville and Siem Reap advance through industrial growth and smart city initiatives. But this boom also brings rising living costs, worsened by greater cooling needs in a warming climate.

To address this challenge, Cambodia's Ministry of Environment launched national green building guidelines that adapt international best practices to local realities. The initiative aims to transform how buildings are planned, constructed, and retrofitted —balancing environmental sustainability, energy efficiency, and climate resilience.

Localizing a global concept

Drawing from DGNB International and Korean models, the guidelines are customized for Cambodia's tropical climate, biodiversity, and urban density. It features separate schemes for new and existing buildings: new builds follow a simplified indicator set, while existing structures are evaluated using about 50 criteria across nine categories, allowing for context-sensitive upgrades through retrofitting or behavioral changes.

With over 80 indicators refined through consultations with 90+ stakeholders during the pandemic, the guidelines reflect a careful balance between ambition and feasibility. Early on, "green building" was widely misunderstood—even among professionals—prompting cross-ministry trainings and the launch of a dedicated Green Building Office. Outreach extended to schools, familiarizing students with sustainability concepts.

Two key trainings stood out: a four-day session for women in construction that drew 63 participants, and a regional workshop involving 15 international attendees from across Asia. Technical sessions, led by global experts, introduced practical applications of sustainability. One lecturer from the Institute of Technology of Cambodia (ITC) began incorporating the materials into his curriculum—his students' enthusiastic response shows green principles are gaining traction in academia.

Piloting practical change

Two pilot projects tested the guideline: one for a new building and one for an existing office at the Ministry of Environment. In the former, green principles were integrated from the planning stage. In the latter, low-cost retrofits—like switching to LEDs, improving ventilation, and adding awareness signage—proved that small, affordable changes can yield impact.

Buildings are rated silver, gold, or platinum based on compliance. While enforcement remains limited, the Ministry's pilot is already influencing budgeting and renovation priorities. These voluntary actions suggest how informal adoption can precede formal regulation.

Practitioners are now applying what they've learned. One architect used the guidelines in a new project; another drafted a green building policy using training materials. The initiative has also gained international attention from Global Green Growth Institute (GGGI), US-based teams, and Germany's "Build for People" project. Key outputs—policy briefs, roadmaps, and technical guidelines—are publicly accessible and in active use.

Enabling private sector leadership

Private sector interest is growing. Major players like OCIC and Coconut Park developers are looking to adopt the guidelines. A Singapore-based firm even offered technical support, showing external validation of Cambodia's approach despite a lack of financial incentives.

Around 20 certified green building assessors now operate in Cambodia, trained by global institutions including IFC and experts from Lithuania and Singapore. Groups like CHIREF, focused on passive cooling for low-income communities, align the green agenda with equity and resilience.

Stakeholders agree: policy alone isn't enough. Demonstration models, awareness campaigns, and business incentives are critical. While upfront costs remain a barrier, reported energy savings of 30–40% offer a strong return on investment. Making these benefits visible can shift perceptions across the construction sector.

Cambodia's green building project is not just a technical exercise—it's a shift in how development is envisioned and enacted. From pilots and trainings to policy and pedagogy, the project has seeded a new understanding of sustainable architecture and engineering, rooted in both global principles and national priorities. While challenges remain—from funding to enforcement—the foundation has been laid through pilots, policies, and partnerships. The country is now well positioned to scale its green vision into a lasting national strategy.

Priority Sector: Environment

Duration: 2021/12/31 - 2024/05/31

MKCF CALL 2

Guidelines and Certification for Green Buildings in Cambodia Project

Country of Implementation: Cambodia

Contacts

Mr. Sovithea Khun
Deputy Director
Green Economy Department
National Council for Sustainable Development
Ministry of Environment
Cambodia
Email: skhun9@gmail.com

Keywords

#GREEN BUILDING CAMBODIA
#SUSTAINABLE ARCHITECTURE
#ENERGY EFFICIENT BUILDINGS
#ECO-FRIENDLY CONSTRUCTION

ROOTING FOR CASSAVA: ENHANCING THE VALUE CHAIN FOR PREMIUM PRODUCTS

Farmers call it "white gold," highlighting the strong earning potential of cassava. Yet, for years, traditional farming methods, low productivity, and limited market opportunities have kept smallholders in the Mekong region trapped in a cycle of hard work with little reward. Even factories rely on traditional management and on-the-job knowledge, leading to inefficiencies and frequent production disruptions. Combined with limited access to improved varieties, disease management techniques, and low investment in specialized cassava production for starch and value-added products, the cassava value chain is at risk of stagnation—unless strategic support, innovation, and market linkages are strengthened across the sector.

This is precisely what the *Capacity Building on Circular Economy for Productivity and Sustainability of the Cassava Chain (CCC)* project aimed to address. Launched across the Mekong region, the initiative sought to transform the cassava value chain by introducing innovative farming practices, energy-efficient processing, and effective waste management. For farmers, starch factory operators, biogas specialists, and other stakeholders in Cambodia, Lao PDR, Myanmar, Viet Nam, and Thailand, the project wasn't just about better agriculture—it was about building a sustainable, integrated value chain.

First roots

Initially, participants were hesitant to adopt new methods, but practical demonstrations highlighted the benefits of sustainable practices, helping them embrace new opportunities. Thailand's National Center for Genetic Engineering and Biotechnology (BIOTEC) developed a curriculum tailored to address various aspects of the value chain, equipping stakeholders with the tools to transform the industry. Farmers learned sustainable cultivation and disease control techniques to boost yields, starch producers adopted energy-efficient processing and zero-waste practices, and biogas specialists focused on optimizing anaerobic digestion for improved waste management.

FThe CCC project fostered a comprehensive network connecting farmers, factory operators, biogas specialists, researchers, industrial stakeholders, and government officials. This coalition became a platform for knowledge-sharing and collaborative innovation, breaking down the silos that had long hindered progress. Over 100 stakeholders from upstream (cassava growers and agricultural officers), mid-stream (starch factory operators), and downstream (biogas factory operators) of the cassava value chain in CLMVT participated in the program. The ASEAN Cassava R&D Center was also established as a hub to transfer knowledge and technology to neighboring countries. With a dedicated website (sustainablecassava.org), active Facebook page, and YouTube channel, the Centre continues to provide resources and networking opportunities for stakeholders across the cassava industry. The Centre's vision focuses on sustainable value chain development through three core functions: knowledge dissemination, technological innovation, and solution provision.

For all stakeholders, this meant access to previously unimaginable support systems—manuals, videos, and best practices—providing valuable tools for informed decision-making. These digital resources supported farmers during planting and pest outbreaks, guided factory operators in optimizing production, and helped biogas specialists implement renewable energy solutions.

From fields to factories

The impact of the CCC project resonated throughout the value chain. In processing facilities across the region, operators and technical staff gained expertise in advanced technologies. After specialized training in biogas production and waste management, factory personnel and biogas specialists learned to transform wastewater into energy, creating a circular economy model that reduced costs and environmental impact.

Communities began to see cassava as more than just a cash crop—there was now potential for sustainable and innovative livelihoods across the entire industry. A virtual National Cassava Center has been established, with plans for it to become a physical center in the near future. The success of the CCC project has paved the way for two new initiatives aimed at boosting the competitiveness of the cassava industry in Thailand and the region. One project focuses on studying resource use and the carbon footprint of cassava starch production in Thailand, with support from the Thai Tapioca Starch Association and participation from 60% of the country's cassava starch factories. The other aims to implement the CIGUS model to drive high-impact research in the cassava industry.

The triumph of the CCC project lies in its ability to empower all stakeholders to explore new possibilities, collaborate on innovation, and believe in a brighter future for the integrated Mekong cassava industry. Through this initiative, what once seemed like insurmountable challenges have become opportunities for growth and sustainability. From fields to factories, the story of change demonstrates that, with the right tools, training, and collaboration, a single crop can unlock both prosperity and sustainability for an entire region.

Priority Sector: Environment
Duration: 2020/07/01 - 2022/12/31

MKCF CALL 3

Capacity Building on Circular Economy, Resource and Energy Efficiency for Productivity and Sustainability of Cassava Chain to High Value Products: Casava Root, Native Starch and Biogas in Mekong Countries Project

Country of Implementation:
Cambodia, Lao PDR, Myanmar, Thailand and Viet Nam

Contacts

Dr. Warinthorn Songkasiri
Principal Researcher and Research Group Director of National Center for Genetic Engineering and Biotechnology (BIOTEC)
Thailand
Email: warinthorn@biotec.or.th

Dr. Kanchana Saengchan
Researcher
National Center for Genetic Engineering and Biotechnology (BIOTEC)
Thailand
Email: kanchana.sae@biotec.or.th

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#CASSAVA VALUE CHAIN
#CLMVT COOPERATION
#SUSTAINABLE AGROINDUSTRY
#GREEN PROCESSING
#AGRITECH FOR DEVELOPMENT

FROM THE CLOUDS: TAPPING THE SKY FOR SAFE DRINKING WATER

For many rural communities in the Mekong region, a glass of clean water remains out of reach. Groundwater is often contaminated by saltwater intrusion or heavy metals—or simply depleted—while centralized water systems are rarely available. Bottled water is impractical and largely unaffordable. Rapid development, population growth, environmental degradation, and climate change have pushed communities to the brink. In schools, the impact is stark: students suffer from dehydration, health risks, and missed days—all due to the lack of safe drinking water. Without urgent action, the health and future of entire communities hang in the balance.

Quite literally, when all else fails, people turn to the sky—praying for the heavens to release a few drops of water. Interestingly, rainwater harvesting was once a common practice in Mekong countries. Roofs served as collection surfaces, and communities cherished rain as a free, life-sustaining gift. But over time, these traditions faded—undone by urbanization, misconceptions, and technical limitations.

Tradition, innovation, and students

Dr. Mooyoung Han, Professor Emeritus at Seoul National University (SNU) and Chair of the International Water Association Rainwater Harvesting Group, saw an opportunity to restore this forgotten wisdom. "Rainwater harvesting is a simple solution that has an incredible effect on overcoming the climate crisis," he explains. His goal is clear: water security for all.

That vision is now being realized through the Rain School Initiative, which integrates technical innovation with community ownership—creating a model that is easy to manage and accessible, even to children. Against this backdrop of urgency, the Community-Based Rainwater for Drinking (CBRD) system has emerged as a practical, sustainable, and hopeful solution, especially in schools. Led by Dr. Han and supported by MKCF, the initiative has turned this overlooked tradition into a lifeline for thousands of students.

At the heart of the initiative is a deceptively simple concept: collect rainwater from rooftops, filter and purify it, and make it safe for drinking—all within school grounds. Each Rain School is equipped with a system that captures rainwater, stores it in multiple connected tanks, and treats it through a multi-stage filtration process to ensure safety—even if one stage fails. With a daily capacity of 500 liters, each system meets the drinking needs of students and staff throughout the year.

"School is the best place to learn to overcome both the water and the climate crises," says Dr. Han. Schools bring together students, teachers, parents, and local authorities—forming a natural hub for community education and engagement.

Since 2022, five rural schools across Cambodia, Lao PDR, Thailand, and Viet Nam have implemented the Rainwater for Drinking (RFD) system, benefiting over 2,500 students and staff. Each system includes a $20m^3$ tank and is equipped with a camera and online monitoring platform that allows remote tracking of water quality and performance.

At Nguyen Binh Khiem School in Ha Long City, Viet Nam—the first Rain School in Southeast Asia—students actively participate in operating and maintaining the system. With 3,345 students and 95 classes, the system currently supports about 20% of the population, with plans to expand. "The school hopes to expand the rainwater filtration system in the future to provide clean water for all the students and reduce costs associated with water provision," said Ms. Nguyen Thi Khuyen, the school's principal.

"Students are the owners and leaders of the future. They must be able to use it, just like adults," says Dr. Han. And they do—testing water quality, learning about filtration, and advocating for climate action in their communities.

The same model is thriving at Kamboul High School in Phnom Penh and Senarat Witthayakhan School in Nakhon Ratchasima, Thailand, where students are also involved in managing the systems. Maintenance training, detailed O&M manuals, and the formation of Skywater Committees—comprised of teachers, students, parents, and local authorities—ensure each system remains functional and sustainable over time.

This community-driven approach addresses longstanding challenges that have hindered rainwater use in the past. Unlike small household systems, which often suffer from poor maintenance and inconsistent quality, the Rain School model leverages the collective responsibility of the school community to ensure reliability and long-term impact.

From drizzle to downpour

Encouraged by similar successes across the region, several governments are considering national-scale adoption. Cambodia has already taken a bold step by launching a plan to build 1,000 Rain Schools, backed by the Ministry of Education, the Royal Academy of Cambodia, and Seoul National University. This milestone was formalized in an MoU signed on 4 November 2024.

The Rain School Initiative is more than a water project—it's a platform for education, empowerment, and climate adaptation. Students gain access to clean drinking water while joining workshops, rain camps, and cultural activities that build awareness and resilience. Blending technical training with student-led learning, it revives traditional water wisdom and pairs it with science-driven innovation.

The success of Rain Schools in the Mekong has drawn global attention. The Nguyen Binh Khiem School will be featured at the UN National Water Action Program in New York, paving the way for international replication. The model is also being considered for rural communities and healthcare facilities, where clean water is just as vital. Aligned with SDG 6.1 and SDG 16, and endorsed by the UN Water Action Agenda, the initiative promotes a new water governance paradigm: Managing All Water, by All, for All.

By engaging youth, reviving traditional knowledge, and fostering democratic participation, Rain Schools are cultivating self-reliance and climate resilience from the ground up. Dr. Han envisions the model expanding beyond schools and across the Global South. "My ultimate goal is to make water secure. Because water is life," he says.

Priority Sector: Environment
Duration: 2022/01/01 - 2024/02/28

MKCF CALL 5

Promotion of Innovative Rainwater For Drinking (RFD) System as a Sustainable Water Supply in Rural Health Care Facilities (HCFs) and/or Schools

Country of Implementation: Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam

Contacts

Prof. Mooyoung Han
Seoul National University
Republic of Korea
Email: myhan@snu.ac.kr

Keywords

#RAIN WATER
#SAFETY
#WATER RESOURCE DEVELOPMENT
#SUSTAINABLE DRINKING WATER
#CAPACITY BUILDING

CLEARING THE AIR: TURNING RICE STRAW WASTES INTO SUSTAINABLE RESOURCE

In the fertile expanse of the Mekong Delta, rice fields stretch as far as the eye can see. Yet with the end of each harvest season came a routine: vast piles of rice straw, left behind as agricultural waste, were set ablaze. For generations, open burning was the simplest way for farmers to clear their fields, despite the heavy toll it took on the environment. The smoke choked lungs and clouded skies, while the flames released tons of greenhouse gases (GHGs), contributing to soil degradation and the climate crisis.

But today, thanks to a homegrown innovation, that narrative is changing. In Can Tho, Viet Nam, and neighboring Takeo Province in Cambodia, farmers are transforming what was once waste into a vital resource. Both key rice-producing regions separated by only a five-hour drive and the An Giang border, Can Tho and Takeo are the pilot sites of RiceEco, a project implementing by International Rice Research Institute (IRRI) and funded by the Mekong-Republic of Korea Cooperation Fund (MKCF). RiceEco offers a new path forward—one that reduces emissions, restores soil health, and improves livelihoods.

From traditional to transformational

Viet Nam and Cambodia produce millions of tons of rice straw each year. Traditionally, most of it was either left to decompose slowly in the field or burned outright. Decomposition, if unmanaged, emits methane and nitrous oxide. Burning, although faster, pollutes the air and strips the land of nutrients. With limited alternatives, many smallholder farmers saw no other choice.

Recognizing this gap, RiceEco set out to tackle two core challenges: (1) reducing emissions from rice cultivation, and (2) creating value from rice straw through sustainable reuse. The project piloted interventions across 250 hectares in Can Tho and Takeo, testing not only technical solutions but also local adoption models.

At the heart of RiceEco is a mechanized composting technology capable of processing rice straw far more than conventional manual methods. Designed by IRRI in collaboration with Viet Namese company Tu Sang, the composting machine can process up to 32 tons of rice straw in a single cycle. Typically, farmers process 30–40 tons of rice straw per month, with each bundle of straw weighing around 15 kilograms.

The innovation works by mixing straw with cow dung, cricket waste, and other organic materials, then infusing them with beneficial microbes. The composting machine accelerates fermentation and produces high-quality compost in just 30 to 45 days, compared to the 60–90 days required by traditional methods. The result? A nutrient-rich organic fertilizer that improves soil health, reduces dependence on costly synthetic fertilizers, and directly addresses the problem of straw waste and open-field burning.

"The compost improves the soil structure, holds more moisture, and reduces our fertilizer expenses. It's more than a technique—it's a long-term investment in our land," said Mr. Sopanya, a project stakeholder from Cambodia.

Farmers using the compost on their own fields are seeing the difference. Across trial sites, they reported 15–20% increases in yield and up to 30% savings on input costs, all while reducing their exposure to synthetic chemicals. The organic compost also improved soil texture and helped retain moisture, which is especially important amid increasingly erratic weather patterns.

"The difference was clear," said Mr. Phan Rhen, a farmer who previously burned straw after harvest. "The rice plants grew stronger, greener, and the yield was higher. I used less chemical fertilizer, and the field was easier to manage."

Accessibility, profitability, and scalability

Beyond technology, RiceEco's strength lies in its community-based model. Rather than centralizing production, the project promotes decentralized, small-scale composting units that can be managed at the household level. This reduces infrastructure costs and makes the approach more accessible to smallholders.

In Viet Nam, the Tien Thuan Cooperative—with its 12 core members—has become a key champion of the model. They provide peer support, equipment sharing, and training sessions to spread composting know-how across farming communities. Farmers can process straw at home using their own garden spaces. This cooperative model reduces logistical costs and increases local ownership of the process. Compost is then sold as organic fertilizer at an average price of VND 500,000 (about USD 25) per ton, generating VND 15–20 million (USD 800–900) in additional monthly income. By investing in straw reuse, even small-scale operations can offer higher returns than traditional burning.

In both pilot sites, farmers benefiting from RiceEco are now exploring ways to improve their facilities, enhance storage, and develop packaging and branding to boost market access.

RiceEco's environmental benefits are also tangible. Every hectare that switches from burning to composting helps avoid the release of up to 5.6 tons of CO_2-equivalent emissions per season. At scale, this could significantly contribute to Viet Nam and Cambodia's climate commitments and national GHG reduction strategies.

There are also ideas to link farmers with carbon credit platforms, recognizing that their shift away from straw burning helps reduce GHG emissions. If successful, this could provide additional income while reinforcing their role as climate champions.

RiceEco has already caught the attention of government officials and development partners as a potential model for broader adoption. Discussions are underway to expand the project to more provinces in the Mekong region, with interest in aligning it with regional initiatives on climate-smart agriculture and sustainable rice value chains.

In Viet Nam, the government has launched the 1 Million Hectare Program for low-emission, high-quality rice production across 13 provinces in the Mekong Delta. RiceEco and the Tien Thuan Cooperative are contributing to this vision by removing rice straw from fields and turning it into useful, affordable organic fertilizer—a comprehensive package for reducing GHG emissions and improving productivity. IRRI has been invited as a technical assistance partner to support the Ministry of Agriculture in this effort.

With RiceEco's pilot phase already demonstrating clear profit potential, the project is now planning its next phase: scaling to 200,000 hectares by 2025–2026 with support from local governments, cooperatives, and academic institutions like Can Tho University. The goal is not just to expand, but to replicate success in new geographies—tailoring it to local needs and realities.

By transforming waste into wealth and smoke into sustainability, RiceEco is not just improving farming—it's reshaping the future of rice agriculture in the Mekong and beyond.

Priority Sector: Environment
Duration: 2023/02/01 - 2026/01/31

MKCF CALL 6

Rice Straw-based Circular Economy for Improved Biodiversity and Sustainability Project (RiceEco)

Country of Implementation:
Cambodia, Viet Nam/ Southeast Asia

Contacts

Dr. Nguyen Van Hung
Senior Scientist, Project Leader,
Postharvest Team Leader
International Rice Research Institute
Viet Nam Country Office
Email: hung.nguyen@cgiar.org

Keywords

#COMMUNITY
#RICE FARMERS
#POLICY MAKERS
#RICE STRAW CIRCULAR ECONOMY

OFFSHOOTS: GROWING CROPS – AND CASH – ON RICE STRAWS

Rice farming on its own has rarely been cited as a source of wealth for smallholder farmers in the Mekong Delta region—or even across much of Southeast Asia. Though rice is a staple for much of the world, rice farming in this region continues to endure support and technology gaps, leaving farmers with incomes too low to sustain their families. Today, rice farming is increasingly viewed as both a contributor to climate change and one of its primary casualties, with emissions from paddy soils and open-field straw burning compounding the challenges farmers already face.

These complex issues are among those the International Rice Research Institute (IRRI) is addressing through RiceEco—a project designed to provide an alternative to rice straw burning by creating value from these byproducts while offering additional sources of income for farmers. Funded by the Mekong Institute's (MI) Mekong-Republic of Korea Cooperation Fund (MKCF), RiceEco has driven research and development on rice straw waste to diversify farming systems and livelihood opportunities for farming households.

Resilient and nutrition-sensitive crops

In Cambodia's climate-vulnerable province of Takeo, RiceEco reuses rice straw waste as compost fertilizer for vegetable farming. This rice-vegetable crop system experiment uses a mix of 30% rice straw compost and 70% chemical fertilizer. Compared with traditional methods, the results showed higher yields and better-quality vegetables, particularly during the dry season—a powerful adaptation practice for drought-prone areas, thanks to the ability of the organic compost to retain moisture.

One standout success is the cultivation of choy sum, a leafy vegetable in high local demand with a quick growing cycle. The project took a participatory approach: farmers contributed labor and expertise, while RiceEco provided rice straw compost and seeds sourced from local markets. This ensured real-world applicability and market relevance. Initial challenges—like identifying experienced vegetable farmers—were overcome through collaboration with Takeo's Provincial Department of Agriculture and Forestry (PDAF). With the right support, selected farmers became early adopters of this climate-smart method, demonstrating that vegetable farming could thrive where rice alone once dominated.

This vegetable farming practice is also becoming more relevant health-wise, as more consumers are preferring organically grown produce. Cambodian stakeholders suggest that if RiceEco's trials for rice and vegetable systems are successful, they could potentially earn certification under the Sustainable Rice Platform (SRP), helping local products gain recognition in global markets.

Earning more with mushrooms

Meanwhile, in Can Tho City, Viet Nam, rice farmers are embracing the science and art of mushroom cultivation, using leftover rice straw to grow straw mushrooms (nấm rơm). Once discarded, straw is now carefully arranged into beds and stacks that maximize airflow and humidity, using no chemical additives—just locally available "mèo nấm" or mushroom spawn to bring the beds to life. Timing is key, with mushroom cultivation strategically planned around the rice cycle, fitting neatly into the narrow windows between harvest and planting. With proper technique, each mushroom bed yields multiple flushes, providing an additional revenue stream for farmers. As one farmer even claimed, "We can earn more from mushrooms than from rice itself."

Mushroom production is both indoor and outdoor, using specially designed racks, with a focus on sustainable agriculture. The process includes rice straw collection, fermentation, and subsequent mushroom harvesting after about 10 days. The indoor method provides more control over environmental conditions, offering higher yields and allowing for multiple harvests per year.

At Tien Thuan Cooperative, this innovation is paying off. Where loose straw once sold for only USD 25 per hectare, integrated composting and mushroom cultivation now generate USD 50 to 70 more per hectare—tripling the value of straw and turning it into a high-return, low-risk venture. On average, farmers cultivate 400 kg of mushroom per month from 15 kg of rice straw. This yields about VND 20 million (USD 800) in income after costs. "We used to burn straw. Now, we grow food with it," said one cooperative leader. "Our land is cleaner, our air is better, and our families earn more."

But this isn't just a technical change—it's a cultural one. In Thoi Lai district, a group of women farmers has created a communal space to dry and process straw for mushroom beds, sharing profits and knowledge while supplying fresh mushrooms directly to local buyers. They have become more than producers—they are entrepreneurs and community leaders. As one cooperative leader reflected, "Before RiceEco, we didn't see any value in straw. Now, it's an asset—and it brings us together as a community." The quality of these mushrooms is also a point of pride. While others chase fast yields using chemical stimulants, Vietnamese farmers focus on flavor and tradition. Their mushrooms are not only more authentic but are winning favor in local markets for their superior taste and texture.

Takeo's and Can Tho's stories demonstrate a powerful shift, where farmers become innovators. Whether growing vegetables in Cambodia or mushrooms in Viet Nam, they're seizing new opportunities, diversifying income, and reducing their dependence on rice alone. What began as an environmental challenge—managing leftover rice straw—has become a catalyst for rural development, women's empowerment, and entrepreneurial growth. As the project scales, it holds the promise of a more resilient, diverse, and sustainable future for Southeast Asia's rice farmers.

RiceEco proves that innovation doesn't always require importing high-cost technologies. Sometimes, the most transformative solutions come from rethinking what we already have—like rice straw. With the right support, farmers are no longer just producers of rice; they are stewards of the land, climate actors, and innovators in their own right.

Priority Sector: Environment
Duration: 2023/02/01 - 2026/01/31

MKCF CALL 6

Rice Straw-based Circular Economy for Improved Biodiversity and Sustainability Project (RiceEco)

Country of Implementation:
Cambodia, Viet Nam/ Southeast Asia

Contacts

Dr. Nguyen Van Hung
Senior Scientist, Project Leader,
Postharvest Team Leader
International Rice Research Institute
Viet Nam Country Office
Email: hung.nguyen@cgiar.org

Keywords

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#POLICY MAKERS
#RICE STRAW CIRCULAR ECONOMY

STREAMLINING SOLUTIONS: RECLAIMING WATERWAYS FROM PLASTIC WASTES

Plastics bring convenience—but not without a cost. For nearly a century, that cost has grown into a global burden, threatening both human health and the environment. Their durability and resistance to degradation mean plastics persist for centuries, leaking into aquatic ecosystems and polluting lakes, rivers, and seas. Microplastics, meanwhile, can enter the human body through inhalation and absorption.

In the Mekong region, plastic wastes are not only a visual blight; they clog major bodies of water, canals, and rivers—vital sources of food, water, culture, and commerce. Fragmented solutions, uncoordinated policies, and the absence of standardized data have long hindered progress and intensified the impacts of the climate crisis.

But change is beginning to flow. A regional project —Mapping Plastic Leakage and Building Solutions in the Mekong Region—is helping turn the tide in Cambodia, Lao PDR, Thailand, and Viet Nam. Led by the Asian Institute of Technology, a leader in engineering, environmental, and management studies, and supported by its Geoinformatics Center with funding from MKCF, the initiative combines practical technology with strong community engagement to detect, monitor, and prevent plastic leakage into waterways.

AI and digital tools as a regional approach

While global initiatives on plastic reduction abound, they often fail to address the localized, on-the-ground complexities faced by riverine communities. This project sets out to do things differently—through a comprehensive, integrated approach that unites science, technology, and grassroots mobilization. It focuses on three key pillars: prevention, detection, and collection—each designed to support scalable, data-driven, and community-led waste management systems. AIT's goal for the region is to enhance the collection coverage of plastic waste, prevent leakage at the source, and create a replicable monitoring system.

At the heart of the project is a suite of innovative tools that transform how plastic waste is tracked and understood. A network of 10 AI-powered CCTV cameras, known as *pLitter*, has been installed across the four countries—Cambodia (2), Lao PDR (4), Thailand (2), and Viet Nam (2). These cameras monitor rivers in real time, identifying and characterizing plastic waste as it flows downstream. A centralized digital dashboard collects data from all sites, allowing stakeholders to analyze trends, pinpoint hotspots, and prioritize interventions. Complementing this is a mobile app, now available in Khmer, Lao, Thai, and Viet Namese, that enables communities to report plastic litter and contribute to regional mapping efforts.

More than 100 participants—including government officials, civil society representatives, and local leaders—have been trained in using these tools. A comprehensive report outlining regional policies and available technologies was also produced, serving as a foundation for policy harmonization and cross-border cooperation. The project's impact has resonated beyond borders, with innovations presented on ten platforms—including the Global Plastic Innovation Platform (GPIP), KOMEC forums in Korea and Lao PDR, Mahidol University, and the SOS2024 symposium—demonstrating that regional collaboration can drive meaningful change.

Local solutions

In Thailand, six partner communities are putting circular economy principles into practice through monthly recycling markets that have so far recovered over 13 tons of plastic waste—demonstrating how environmental stewardship can support local livelihoods. Participation has been strong, with 175 households (14%) joining waste management training, 120 households (10%) regularly trading recyclables, and 39 households (3.1%) composting organic waste, each cutting about 20 kg of waste monthly. Awareness is further reinforced through six types of environmental signboards, while a children's zero-waste camp engaged 157 youth who collected 139 kg of residual waste and learned sustainability through interactive activities.

In Can Tho City, Viet Nam, the project has centered on institutional and educational collaboration. A formal MoU with a local school brought together over 500 students, 43 teachers, and 20 community stakeholders, laying the foundation for long-term engagement. Students painted 14 murals to promote zero-waste values, while 110 students and 43 teachers received hands-on training in sustainable living. A city-wide Zero-Waste Day attracted 600 participants through activities and pledges that fostered collective responsibility. Complementing these efforts, a river litter trap intercepted 1,027 kg of waste—sorted into hard plastic, soft plastic, Styrofoam, and mixed household waste—offering both environmental relief and concrete data.

In both Cambodia and Lao PDR, the project focused on building foundational capacity for long-term plastic waste management through training, technology deployment, and community engagement. In Cambodia, stakeholders were equipped with skills in plastic leakage mapping and AI-CCTV monitoring, while students at the Royal University of Phnom Penh used a mobile app to identify and report waste. In Lao PDR, baseline studies and training sessions for schools and communities laid the groundwork for informed action.

Indeed, individual national efforts share a strong emphasis on education, digital tools, and locally driven solutions. Further, this project isn't just about stopping plastic from entering rivers; it's about redefining how waste is perceived and managed—empowering communities, building local capacity, and creating platforms where youth, governments, and civil society can work side by side. Most of all, it's about offering a regional model for action that is replicable, inclusive, and sustainable.

Priority Sector: Environment
Duration: 2024/03/01 - 2026/05/31

MKCF CALL 7
Mapping the Plastic Litter Leaking into the Waterways of Mekong Countries and Providing Innovative Solutions for Efficient Waste Management Project

Country of Implementation:
Cambodia, Lao PDR, Thailand and Viet Nam

Contacts

Dr. Kittiphon Boonma
Research Specialist
Asian Institute of Technology
Thailand
Email: kboonma@ait.asia

Keywords

#PLASTIC POLLUTION
#PLASTIC LEAKAGE
#SUSTAINABLE DEVELOPMENT
#STI FOR SUSTAINABILITY
#WASTE MANAGEMENT
#REGIONAL COLLABORATION
#ZERO WASTE CAMP

WORKING WITH NATURE: BUILDING SAFER, MORE FLOOD-RESILIENT COMMUNITIES

For decades, communities along Cambodia's Stung Prek Tnaot River have faced relentless flooding and riverbank erosion. Crops were destroyed, roads became impassable, and schools shut down during the rainy season. Families relied on limited, often ineffective solutions—planting bamboo or trees that were swept away, or constructing costly concrete embankments out of financial reach for most households.

In March 2024, the Institute of Technology of Cambodia (ITC), with support from MKCF, launched a project to change this trajectory. The *Integrated River Basin Management of the Mekong Basin Tributary for Adaptation to Climate Change* aimed not only to build flood resilience and promote sustainable watershed management but also to influence future policy directions.

Within a year, the project delivered visible results—rooted not in heavy infrastructure, but in simple, ecological solutions and sustained community involvement.

At the core of this transformation is a nature-based erosion control measure that works with, rather than against, natural processes. The intervention uses kenaf bags—biodegradable natural fiber sacks filled with sand or soil and arranged in rows along the riverbank. These are reinforced with fast-growing trees planted among them, whose roots anchor the bank over time. Durable, low-cost, and easy to replicate, the kenaf bag method offers an accessible alternative to concrete embankments, especially for poor communities.

Addressing riverbank erosion is key to building long-term flood resilience. As riverbanks erode, communities lose their natural defenses, making them more vulnerable to flood damage. By stabilizing these banks using kenaf bags, the project promotes not only the protection of land and infrastructure but also helps reduce the risk of further flooding.

Previous efforts to stabilize riverbanks relied either on bamboo or tree planting—often without proper design or consideration for flood conditions—or on concrete, which, while effective, was four to five times more expensive. By contrast, the kenaf bag solution is both environmentally sound and financially feasible. As Commune Council Member Khem Khorn shared, "Severe flooding and erosion used to affect five of our villages. Traditional methods didn't hold. This nature-based solution has proven both practical and effective."

The intervention was implemented by the community itself. Project staff provided technical guidance and materials, but residents carried out the work. This hands-on approach empowered people to learn by doing, and replicate the technique on their own.

Better prepared

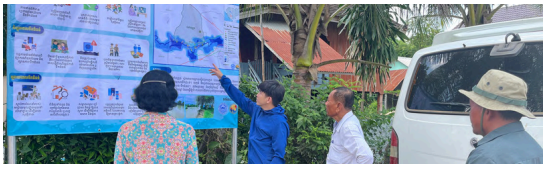
The project's broader flood resilience efforts began with a pilot in a high-risk community. Interactive training sessions were conducted on disaster preparedness and climate adaptation, including evacuation drills at a local primary school serving 600 students. "Flooding used to disrupt our classes for weeks," said school director Ms. Bot Sombat. "Now our students understand what causes floods and how to respond. We're more prepared and more aware."

Although no severe flooding occurred during the latest rainy season, the newly installed early warning systems were still put to use. Weather forecasts, water-level monitoring, and Telegram-based alerts provided community leaders with updates two to three times per week—useful not just for disaster preparedness, but also for agricultural planning. Megaphones and strategically placed flood information boards ensured that even residents without smartphones were kept informed.

Before the project, flood communication was fragmented—often limited to phone calls and uncoordinated updates. Now, a structured system connects upstream and downstream actors. A Telegram group includes local leaders, community members, and provincial agencies like the Department of Water Resources, enabling real-time alerts and sharing of updates and preparedness actions. Plans are underway to transition management of this group to trained local leaders, ensuring sustainability beyond the project's lifespan.

ITC also works with the National Committee for Water Management to access technical forecasts and dam release information. This data is translated into local languages and simplified formats, enhancing community understanding and trust. In the project's second year, these partnerships are expected to deepen, with further training to help residents interpret and apply technical data in local decisions.

Understanding risk was another critical piece. Prior to the project, communities lacked usable flood data. The project addressed this gap by conducting flood risk assessments and installing public information boards featuring flood maps based on climate projections. These boards also include clear steps for action before, during, and after a flood. About 20,000 members of the communities covered by the project are seen to benefit from these new plans, systems, and information.



In addition, life jackets were made available.and a designated evacuation site—co-located with the school—was established and used in a simulated drill in late 2024 involving students and village residents. Commune and religious leaders, trained under the project, are now capable of managing alerts and leading evacuation procedures.

From practice to policy

While policy reform remains a long-term goal, the project has begun documenting its findings, methodologies, and impact to inform subnational and national planning. The project also raises awareness of upstream drivers of flooding—like deforestation and agricultural expansion—without intervening directly in land use planning. It helps communities understand that upstream actions have downstream consequences, laying the groundwork for future shifts in land management behavior.

Though the project brought practical tools—kenaf bags, flood boards, early warning systems—its most lasting contribution may be the exposure to new systems and ideas. Residents who once saw floods as unavoidable are beginning to view resilience as something they can build. Leaders who once waited for help now take initiative. And communities that had few tools for preparedness are now organized, informed, and actively leading their own safety efforts.

Priority Sector: Environment
Duration: 2024/03/01 - 2027/02/28

MKCF CALL 7
Integrated River Basin Management of the Mekong Basin Tributary for Adaptation to Climate Change Project

Country of Implementation:
Cambodia / Mekong region

Contacts

Prof. Dr. Chantha Oeurng
Institute of Technology of Cambodia
Cambodia
Email: chantha@itc.edu.kh,
chanthaposat@yahoo.com

Keywords

#WATERSHED MANAGEMENT
#NATURE BASED SOLUTIONS
#FLOOD RESILIENCE
#SUSTAINABLE RIVER BASINS
#MEKONG ENVIRONMENTAL PROTECTION

INTO THE WOODS: FOREST STEWARDSHIP FOR LIVELIHOODS AND ECO RESILIENCE

Poverty in Myanmar, particularly in rural and forested regions, has intensified, with rates nearly doubling since 2017. This poverty is driven by limited economic opportunities, reliance on forest resources, and environmental degradation. Many forest-dependent communities lack formal employment and depend on timber, fuelwood, and non-timber forest products (NTFPs) for sustenance. However, unsustainable harvesting practices and poor infrastructure—such as inadequate roads and limited market access—result in low, unstable incomes, trapping communities in poverty. Deforestation further exacerbates these challenges, depleting vital resources and perpetuating the cycle of poverty.

Forestry is critical to rural livelihoods, providing both subsistence and income through timber and NTFPs like medicinal plants and bamboo. However, overexploitation has diminished these resources, underscoring the need for sustainable forest management. Participatory Forest Management (PFM) has been adopted as a solution, empowering communities to manage their forests, restore degraded land, and integrate agroforestry systems.

Barking up the right tree

One of the most notable examples of participatory forest management in Myanmar is the "Demonstration of Model Community Forests (CF) to Promote Community Forestry Development and Improve Livelihoods" project. This two-year initiative, implemented in collaboration with the Forest Department and various international partners, aims to promote community forestry and participatory forest management as strategies for both forest conservation and poverty reduction. The project focuses on building local capacity and empowering communities to manage their forests through a series of activities related to agroforestry, NTFP collection, and community-based tourism.

The goal is clear: to support local communities in managing their forest resources while enhancing economic and ecological resilience. The project is being carried out in three key locations: Nay Pyi Taw and Shan State, with activities spread across community forests like Maing Thauk CF, Lwe Nyeint CF, and Pha Laung CF.

In Shan State, the project is based on the foundation of already-certified community forests. In Nay Pyi Taw, the project focuses on an area of 130 acres in Nan Cho Reserved Forest, where 25 community forest users had traditionally relied on betel-leaf cultivation. Betel-leaf, once a profitable crop, has seen declining yields and a lack of commercial by-products, leading to unsustainable income for these farmers.

Here, the Phalaung villagers had long relied on Erythrina stricta (prickly coral tree) in their agroforestry systems. This species offered many benefits: fast growth, nitrogen-fixing properties, and a natural fence that protected and shaded the valuable betel vines. However, challenges soon became apparent. Though the betel leaf harvest brought income twice a year, E. stricta plantations had a 17–30 year rotation cycle and were increasingly affected by fungal issues. More critically, the wood of E. stricta had no commercial value, leaving villagers with no final product at the end of the cultivation rotation.

After extensive consultations with local farmers, the project team introduced agroforestry practices that integrated valuable timber species such as Acacia mangium and teak into the existing systems. This innovation respected traditional practices while enhancing productivity and economic returns. Villagers responded enthusiastically, planting at least 150 seedlings per acre—and in some mountain ridges, as many as 500 seedlings per acre.

This transformation proved both practical and profitable. The long rotation of E. stricta aligned perfectly with the timber species, and projections showed that villagers could earn over USD 5,000 per acre from timber sales—a meaningful boost to household incomes. This shift transformed agroforestry from a subsistence-based activity into a resilient and profitable livelihood strategy, addressing both economic and environmental needs.

The project's success also lies in its co-management approach, which integrates local knowledge with technical guidance from the Forest Department. This collaborative governance model has empowered communities, equipping them with the tools and knowledge needed to effectively manage their forest resources and restore degraded land. In doing so, the project has promoted both forest sustainability and economic resilience.

Branching out

Another critical aspect of the project is its community engagement and capacity-building efforts. Through training workshops, awareness campaigns, and farmer-to-farmer exchange visits, community members have gained valuable insights into sustainable agroforestry practices. For example, in June 2022, a group of CF users from Pha Laung CF visited successful agroforestry-based community forests in the Yangon Region. There, they learned about diversified agroforestry models, market linkages, and crop selection. As a result, they began incorporating crops like jackfruit and avocado into their plots, further diversifying their income sources.

The success of the project has inspired interest beyond the immediate project area. With support from the Forest Department, study tours have been organized for visitors from regions like Yangon and Bago. Seeing the benefits of agroforestry firsthand, many visitors have returned home motivated to replicate the practices in their own communities, spreading the positive impact of community-based forest management. By planting forest trees for timber production, fencing, and supplemental income, these neighboring communities are contributing to both their own prosperity and the restoration of Myanmar's vital ecosystems.

By empowering local communities to manage their forest resources, promoting agroforestry and NTFP-based enterprises, and providing training and technical support, this initiative is laying the groundwork for a more sustainable and prosperous future for rural communities across the country. The success of this model also highlights the critical role that forestry can play in poverty reduction and ecological restoration, offering a blueprint for further development in Myanmar's rural regions.

Priority Sector:
Agriculture and Rural Development

MKCF CALL 3
Demonstration of Model Community Forests to Promote Community Forestry Development and Improve Livelihood of Local Community Project

Country of Implementation: Myanmar

Duration: 2020/12/1 - 2023/11/30

Contacts

Mr. Sein Moe
Assistant Director
Extension Division, Forest Department Headquarter
Ministry of Natural Resources and Environmental Conservations
Myanmar
Email: seinmoe9@gmail.com,
mekongkoreafdmm@gmail.com

Keywords

#COMMUNITY FORESTRY
#CLIMATE AGRICULTURE
#SUSTAINABLE DEVELOPMENT
#CAPACITY BUILDING

SOAKING IT IN: TRANSFORMING RAINFED FARMS WITH SOIL AND WATER PRACTICES

In Pakse's rainfed farms, the problem is simple: no rain means no water—and without water, crops don't grow. But water does more than hydrate plants. It keeps the soil healthy and helps crops absorb essential nutrients. Ensuring reliable water access is therefore critical for productive farming.

Mr. Sinsamut, a 60-year-old farmer from Ban Nonsaat, knows this struggle well. "We relied entirely on the rain," he recalls. His three hectares yielded only six tons of rice a year, bringing in around 20 million LAK (about USD 950). In his district, the soil was depleted, water was unreliable, and access to modern farming techniques was limited. Mr. Sonbang faced similar difficulties—farming two hectares and producing just 2.5 tons of rice per hectare amid persistent water supply issues. And these are the exact challenges that an MKCF-funded project in Pakse set out to address.

Led by Lao PDR's Department of Agricultural Land Management, the Soil, Water, and Nutrient Management (SWNM) project introduced new techniques—soil preparation, crop rotation, organic fertilizers—and vital infrastructure to help farmers turn things around.

Mr. Sinsamut and Mr. Sonbang are among 23 model farmers. Both had relied on traditional rice farming before joining the project. Through training on soil and nutrient management, they learned to enrich the land, rotate crops, and apply compost and fertilizer more effectively. These techniques revived the soil and opened the door to more diverse and productive farming systems. With this foundation, they began growing vegetables and fruits, and even raising livestock—shifting from subsistence farming to market-oriented agriculture.

When it rains, we store

But perhaps the most important intervention of all was the development of water retention ponds —transforming farmers' ability to irrigate, grow crops year-round, and stabilize income. "Without this, farming beyond the rainy season was impossible," they said.

The project constructed seven ponds for farmers who lacked access to sufficient water. Others who already had ponds struggled with poor retention. The project helped by sharing knowledge and providing technical support to improve water-holding capacity.

On Mr. Sonbang's farm, a new pond and solar-powered water pump were installed at a cost of about USD 5,000. More than just a water source, the pond became a gateway to year-round farming, making his farm more resilient and profitable, no longer bound by the rainy season.

Since the pond's construction and his shift to crop diversification, Mr. Sonbang's income rose from about 7 million to 10 million LAK annually. He now earns from sweet corn, vegetables, beans, chili, and other crops. His family enjoys better nutrition and multiple income streams. "Before, we only lived off rice," he said. "Now we have vegetables, fruit, fish—we have more food and more income."

Meanwhile, Mr. Sinsamut experienced a remarkable transformation. His annual income rose to 90 million LAK in 2022 and climbed to 150 million LAK in 2023—a 7.5-fold increase from his baseline. He credited this dramatic growth to improved practices, crop diversification, and the construction of a water pond.

He expanded into guava and other high-value crops, selling directly at fresh markets without intermediaries. With seeds and training provided by the project, he significantly boosted productivity and profit.

He also began raising livestock, eventually owning six cows. While the project didn't supply the animals, it provided indirect support by teaching composting using cow dung—locally dubbed "magical compost"—and supplying rock concrete to build a fertilizer storage house. By 2023, an estimated 130 million LAK of his income came from crops, with the rest from livestock. Standing beside his composting shed and guava trees, Mr. Sinsamut said, "This project changed how I farm, how I earn, and how I see the future."

Seeing is believing

According to Project Coordinator Sambong Savana, early skepticism gradually gave way to trust. "By the second year, they saw the results," he said. Training sessions and exposure visits—such as those to Vientiane, where 30 farmers observed organized, mechanized farms—were key in shifting mindsets.

Knowledge exchange extended beyond Lao PDR. Farmers joined study trips to Cambodia, Thailand, Korea, and Viet Nam, gaining insights on water harvesting and sustainable agricultural practices. Lao PDR officials joined too, observing how infrastructure and policy align in more advanced agricultural systems.

But the project wasn't just about technology—it was about transforming perspectives. "We're building a culture of agribusiness," Sambong emphasized.

"We learned not just how to plant, but how to think about farming as a business," said Mr. Sinsamut. Inspired by farms in Thailand and Viet Nam, he started adjusting his planting calendar based on market trends and labor availability. He soon became a local resource, welcoming farmers curious to replicate his success.

Still, cost remains a barrier. The cost of a single pond is beyond the reach of most smallholders. Mr. Sonbang was fortunate to receive support, but many were not. As interest in the model grew, so did proposals for shared infrastructure and community-managed ponds to make water access more inclusive.

The good news is that proposals are now in place to replicate the model introduced by the project. Meanwhile, the 30 model farmers will serve as peer trainers, passing on knowledge to nearby villages.

Policymakers are paying attention. Ministers, governors, and national officials have visited the model farms, sparking discussions on integrating soil and water management into national planning. The project team is preparing policy briefs and educational materials to embed these lessons in future agricultural strategies.

What began as a project about knowledge, water, and soil has grown into something bigger. It has built trust, fostered entrepreneurship, and laid the foundation for much-needed policy change.

Priority Sector:
Agriculture and Rural Development

MKCF CALL 4
Soil, Water and Nutrient Management (SWNM) for Increasing Farm Households' Income in Drought Zones of the Lao PDR Project

Country of Implementation: Lao PDR
Duration: 2021/04/19 - 2024/12/18

Contacts

Dr. Nivong Sipaseuth
DG of Agricultural Land Management
Department of Agricultural Land Management
Ministry of Agriculture and Forestry
Lao PDR
Email: nsipaseuth@yahoo.com

Keywords

#AGRICULTURE
#FARMER TRAINING
#SWNM
#CAPACITY BUILDING

BRIGHTER DAYS: IMPROVING FOOD PRESERVATION USING SOLAR DOME

Sun drying is one of the oldest methods for preserving food. From fruits and fish to rice and root crops, it remains a common technique in many rural areas. But traditional sun drying has its limits—chiefly, the weather. When the sun is absent or the rainy season arrives, production halts. Even on sunny days, exposure to dust, insects, and animal droppings puts food at risk of contamination and spoilage.

In Vientiane, a small team is piloting an innovative solution: the solar dome. This modern, solar-powered drying system creates a controlled environment that speeds up drying, improves food safety, and enhances product quality. Unlike open-air drying, the dome traps heat and protects food from external elements, ensuring a faster and more hygienic process.

Learning from neighbors

The current solar dome prototype in Vientiane operates using electricity, but the team is developing a biomass-based heat exchanger—using materials like rice husks or wood—to lower costs and enhance sustainability.

The team has studied related technologies in Thailand. While Thai systems use food-grade stainless steel for better hygiene, the Lao version relies on more affordable materials such as plastic or polycarbonate, which are locally available, underscoring the need to balance innovation with local practicality and affordability.

Solar panel systems ensure the device functions off-grid, storing energy in batteries for 24-hour monitoring.

At this stage, the project remains non-commercial, with a strong focus on building local skills for designing, installing, and maintaining the systems. "Our main goal is to develop local skills so that communities can install and operate these systems and provide technical service," a team member explained. Women are seen as key beneficiaries, particularly through reduced labor in food processing.

Khao Lao: A case study

For Khao Lao, a social enterprise devoted to preserving Lao culinary heritage, the solar dome has been a game changer. The company produces traditional Lao rice snacks—such as sticky rice crackers and crisps—and previously relied on open-air drying that could take up to three days and was frequently disrupted by unpredictable weather.

As part of its efforts to obtain a Good Manufacturing Practices (GMP) certification, Khao Lao partnered with the project to install a solar dome. The dome became operational during the rainy season from May to July 2024. It accommodates up to 60 trays at a time and reduces drying time to just 1.5 days—doubling efficiency and significantly boosting productivity.

"Sometimes in the rainy season, it rains for two weeks straight… the dome will help dry the crackers," shared Ms. Aluna, one of Khao Lao's founders. "Basically, this dome is all digitalized… everything is centrally controlled." Through a mobile app—developed in collaboration with a private software partner—the team can remotely monitor and adjust temperature and humidity to maintain optimal drying conditions. "It's easier… our business must go digital these days," she added.

Founded in 2017, Khao Lao blends cultural preservation with inclusive, sustainable business practices. Over 70% of its collaborators are women, many of whom are involved in food production and processing. By adopting the solar dome, the enterprise has enhanced both its productivity and environmental sustainability. The controlled drying environment has improved product quality—preserving color, flavor, and potentially nutrients like vitamin C. Now, Khao Lao's rice crackers and crisps, produced with the solar dome, are available at airports and duty-free shops, with shelf life extended from 100 days to six months.

Beyond crackers

The solar dome's utility extends well beyond rice snacks. Khao Lao now uses the dryer for bananas, mangoes, and purple sweet potatoes—products that previously took much longer to dry and were vulnerable to moisture and pests. For instance, bananas used to take up to five days to dry; with the dome, it's down to just two or three.

This flexibility makes the solar dome a valuable tool for a wide range of producers—from fruit and herb growers to fish processors—offering a reliable, clean method for drying perishable goods.

The project is not just about technology; it's about empowering people. A key goal is to build local capacity to design, install, and maintain solar dryers. "This is not just about technology. It's about building local capacity. If something breaks, the villagers should be able to fix it themselves," said Mr. Bounmy, a local technician involved in the project.

By training local technicians and emphasizing hands-on learning, the initiative ensures that communities can independently sustain and repair the technology. It also reduces the labor burden, especially for women who traditionally handle the drying process. "This will reduce women's time and workload, especially in traditional drying, which is very labor-intensive," noted a representative from the district agriculture office.

The project team emphasized that improving quality must go hand-in-hand with boosting income. "The fundamental purpose is to help them sell—to help them increase income. That's the long-term impact: economic," they stressed.

The solar dome project in Vientiane is a powerful example of how practical innovations can support rural livelihoods, strengthen food safety, and promote environmental sustainability. For enterprises like Khao Lao, it has improved efficiency, reduced contamination, and opened new opportunities for product diversification and market growth. Truly, this initiative is poised to transform small-scale food processing in Laos and contribute to better climate resilience and brighter future for SMEs in the region.

Priority Sector:
Agriculture and Rural Development

MKCF CALL 6

Development and Promoting of Solar Drying Utilization for Agricultural and ODOP Products Project

Country of Implementation: Lao PDR
Duration: 2023/01/09 - 2026/01/08

Contacts

Mr. Vilaythong Aemixay
Deputy Director of Training Center
Research Institute for Energy and Mines
Lao PDR
Email: vilaythongair@gmail.com

Keywords

#SOLAR DRYER
#ODOP PRODUCTS
#SUSTAINABLE DEVELOPMENT
#CAPACITY BUILDING

CATCHING THE WIND: POWERING RURAL COMMUNITIES WITH SMALL-SCALE ENERGY

In an age where nations are racing toward clean energy futures to stay cool under a heating planet, Myanmar finds itself plunged into both literal and figurative darkness. Each year, as the searing summer heat rolls in, so do the power cuts—and in 2024, things have only gotten worse. Power generation is now virtually a national emergency: electricity demand exceeds 6,000 megawatts, yet the system struggles to produce even 2,500. Once relatively stable with hydropower and gas-based electricity, Myanmar is now locked into a 4-hours-on, 8-hours-off schedule in major cities. On the ground, the situation is even bleaker. Unlike in other countries where rising electricity demand is driven by urban growth and economic expansion, around 80% of Myanmar's rural households aren't even connected to the grid. For them, there is no electricity to cut—only a long-standing absence.

Myanmar's electricity mix is heavily reliant on water and gas. As of 2020, hydropower accounted for 52% of generation, with natural gas contributing another 45%. But this dependence on rivers has become its undoing. In 2021, hydropower generation stood at 3,711 MW; by 2024, it had plummeted to just 2,000 MW as shrinking monsoon rainfall left reservoirs dangerously low. Meanwhile, the gas sector is under pressure from rising global prices and dependence on imported liquefied natural gas. Solar power—once a promising path forward with 28 major projects awarded in 2020—has stalled. Investor flight and several other issues have dimmed its prospects. Coal remains on the margins, constrained by environmental concerns.

Wind of change

Yet amid the gloom, one potential solution has quietly begun to stir: wind energy.

Myanmar's geography offers pockets of promise. Coastal and highland regions, particularly in Rakhine, Chin, and Shan States, enjoy seasonal monsoon winds reaching 5–7 m/s—sufficient to

make small-scale wind energy viable. Though technical potential remains modest (<80 W/m^2 across much of the country), areas like Kyaukpadaung, Meiktila, and Nyaung U experience stronger, steadier winds for 6–10 months each year.

A collaborative initiative led by Yangon Technological University (YTU) and the Department of Research and Innovation (DRI), with support from Korean and Vietnamese partners, is breathing life into the sector. Launched under the MKCF 2017 framework, the project focuses on building micro-scale wind turbines for rural electrification while strengthening national expertise in wind energy. Specifically, it aims to equip government staff and private sector participants in Myanmar with essential knowledge and practical skills in wind energy, focusing on fundamentals, turbine blade manufacturing, aerodynamic analysis, wind speed measurement, and system design for small-scale wind power. It also fosters networking among experts from academia, industry, government, and NGOs to strengthen collaboration in the wind energy sector.

As of late, the project has developed a comprehensive training curriculum that includes hands-on fabrication procedures. It produced a wind speed map of Myanmar, identified potential turbine sites, and conducted a socio-economic feasibility study in Kun Chan Kon

township. A lab-scale horizontal axis wind turbine was designed using Blade Element Momentum Theory, with components manufactured via CNC machines and assembled at industrial facilities. Performance testing was conducted at university campuses and in Letkokkon village, where preliminary results were comparable to standard models. To support training and design, the project also developed a suite of custom computer programs for blade design, vibration analysis, power output calculation, and tower strength assessment. After some software was retired due to intellectual property concerns, new design tools were created in Excel for continued use in training. Stakeholders from government, academia, and the private sector were trained in wind power system design, blade aerodynamics, load estimation, and testing. Together, these accomplishments lay the groundwork for sustained innovation in Myanmar's wind energy sector.

In essence, Myanmar has taken its first steps toward wind energy—quiet, careful, but crucial.

A breath of hope

Wind won't replace hydropower overnight. But it represents a vital opportunity—a chance to diversify Myanmar's energy sources and reduce overreliance on rivers and volatile gas imports.

Experts agree: the energy mix must evolve. That means restarting suspended energy projects, rethinking energy import strategies, and unlocking wind's potential wherever feasible. Without these efforts, the arithmetic is simple. Blackouts will multiply like zeros, and the national grid will remain a patchwork of missed opportunities. But if Myanmar catches the wind at the right time, perhaps future summers will be a little brighter—and a lot more electrified.

MKCF CALL 2

Capacity Enhancement on Wind Energy Usage for Sustainable Rural Development in Myanmar Project

Priority Sector: Infrastructure
Duration: 2018/03/14 - 2024/02/29

Country of Implementation:
Lao PDR / Lower Mekong River Basin

Contacts

Dr. Min Thaw Tun
Professor & Deputy Head
Department of Mechanical Engineering
Yangon Technological University
Myanmar
Email: thawmin@gmail.com,
drthanthan.mech@gmail.com

Keywords

#RENEWABLE ENERGY
#ENERGY ACCESS
#WIND ENERGY
#GREENGROWTH
#RURAL

WHEN THE WELLS RAN DRY: BUILDING WATER RESILIENCE IN FARMING VILLAGES

It's hard to believe that a province at the heart of the Mekong Delta—where the Mekong River drains into Tonle Sap Lake—could face water resource challenges. Yet this was the reality for Kampong Chhnang and other farming provinces in Cambodia, when the country suffered one of the most devastating droughts in its history.

"Please continue to save and use water sparingly, especially in remote rural areas far from water sources," urged a December 2022 announcement from Cambodia's Ministry of Water Resources and Meteorology, published on a news portal. The following year, water shortages devastated communities in Kampong Chhnang: crops failed, incomes fell by 2–3 million riels aper household, and even groundwater sources dried up. Livestock suffered. Conflicts over water access rose, laying bare the fragility of existing water systems.

Amid the crisis, farming villages in Kampong Chhnang learned to manage water more effectively, strengthened ties with the government, and diversified their livelihoods as steps toward climate resiliency. And this was not by mere chance, but through a structured and data-informed capacity-building program by Enhancing Community and Small-scale Water Resource Management in the Mekong Region Project, also known as, the X-Water project.

Turning silos into a network

An MKCF project that was launched in December 2021, X-Water spent its first full year (2022) laying foundations—designing activities, engaging local stakeholders, and collecting baseline data. The project team prioritized local ownership, building relationships with farmers, authorities, and educators. By 2023, field research had concluded, and communities participated in validation workshops to discuss findings. These sessions allowed local voices to shape solutions—an early marker of the project's inclusive approach.

Throughout 2023, X-Water ran capacity-building events focused on sustainable, community-driven water management. Farmers from Kampong Chnnang visited a model farming community in Kampong Thom, learning how shared irrigation planning, diversified agriculture, and peer-to-peer support drive water resilience. In another training, they also mapped local water and agricultural resources, visualizing their assets and planning for more efficient and equitable use.

You would think that agricultural and water resource management training would best address the communities' skills needs given their situation. While X-Water also worked on improving farmers' capabilities in these areas, the project looked beyond and, through its baseline studies, found that water management in two villages in Kampong Chhnang also suffered from communication and coordination problems. And so, X-Water organized digital literacy training sessions that introduced elders and farmers to communication and social media platforms like Telegram and Messenger. While seemingly basic, this proved to be one of the most transformative interventions—enabling farmers to access weather alerts, coordinate across villages, and respond more quickly during water crises.

In the province, small dams regulate the flow of water from the main source down to the villages, which are responsible for managing water gates and monitoring flow patterns. Following their training in communication and coordination, locals now operate the dam collaboratively. Telegram groups facilitate real-time communication between upstream and downstream communities, ensuring smoother irrigation schedules and reducing disputes. Communities now monitor upstream reservoirs and gates, recognizing the value of cross-village cooperation in managing shared water flows. Where villages once acted in silos, they now function as a coordinated network.

Indeed, the project brought about a shift in how communities manage their water resources. Previously, early and uninformed water releases from dams led to shortages later in the farming season. Through three rounds of training, farmers learned to retain water early, improving seasonal irrigation planning. As a result, many could now grow rice two to three times per year.

Adapting to changing weather patterns

The 2023 drought exposed the vulnerability of rice-dependent farmers and their reliance on consistent water supply. So on top of improving community-based water resource management, XWater also promoted the diversification of farmers' livelihoods. It identified and promoted six "model farmers" who practice integrated agriculture—rotational cropping, livestock rearing, vegetable gardening, and even fish pond maintenance. Their work was showcased to inspire replication.

One female farmer stood out. She began growing palm trees—valuable for food, shelter, and local biodiversity—along her dykes and homestead. Her initiative is now being used as a model for the project's next phase, with the aim of encouraging agroecological farming that blends environmental stewardship with livelihood gains. Besides, diversifying income sources helps in reducing water stress, ensuring a sufficient supply of fresh water in the years to come.

And this is only one way farmers in Kampong Chnnang are adapting to erratic weather patterns. In flood-prone areas near Ton Le Sap, they began practicing recession rice farming—planting after the floods recede, making use of nutrient-rich silt. The strategy reduces dependency on canal irrigation and follows natural cycles.

Strengthening linkages

Beyond providing water management trainings and introducing new coordination systems, X-Water strengthened ties between rural communities and government agencies. Where bureaucratic hurdles once stalled crisis response, village leaders can now directly engage the Ministry of Water Resources and Meteorology for timely interventions.

Provincial agencies like the Community Agriculture Office and the Department of Agriculture also complemented X-Water's work by providing technical training to farmers, promoted climate-resilient crops, and supported infrastructure improvements such as roads for better market access.

In an X-Water policy workshop, farmers sat down with officials from the Department of Water Resources, Tonle Sap Lake Authority, and the Cambodia National Mekong Committee to discuss small-scale water storage, agricultural diversification, and responsive governance.

X-Water laid a strong foundation for sustainable, inclusive water governance in Kampong Chhnang. Communities shifted from being passive stakeholders to active agents of change. In a year marked by one of the harshest droughts in memory, X-Water didn't just respond—it empowered communities to lead, learn, and adapt, proving that even in crisis, transformation is possible.

MKCF CALL 5
Enhancing Community and Small-scale Water Resource Management in the Mekong Region (X-Water Project)

Priority Sector: Environment
Duration: 2021/12/20 - 2025/05/31

Country of Implementation:
Cambodia, Lao PDR and Thailand

Contacts

Dr. Buapun Promphakping
Director
Center for Civil Society and Nonprofit Management
Faculty of Humanities and Social Sciences
Khon Kaen University
Thailand
Email: buapun@kku.ac.th

Keywords

#X-WATER
#WATER RESOURCE DEVELOPMENT
#WATER CRISIS
#CAPACITY BUILDING

STAMPING OUT FLAMES: PROTECTING FORESTS AND LIVES USING DIGITAL TECH

Wildfires have become a regular feature in the news lately, fueled by extreme weather and, at times, careless tourism that turns a single spark into a forest-wide blaze. While most headlines focus on mega-fires in the Americas, the Middle East, and parts of the Global South, forest fires are also a reality in the Mekong region—especially in Cambodia and Viet Nam, where dense, lush vegetation is both a gift from nature and a potential fire hazard.

For years, forest fire management in Cambodia and Viet Nam was like fighting an invisible enemy. In Cambodia, while legal frameworks allowed communities to engage in forest fire prevention, fragmented mandates, limited technical skills, and the absence of a national strategy meant that fires were often treated as isolated incidents. The response was reactive, underfunded, and frequently too late to prevent major damage.

Viet Nam had more advanced forest inventory systems, but they weren't integrated into real-time fire response. Digital tools for early warning, coordination, and action were largely absent. Manual reporting created delays, and communication between central and local agencies was inconsistent, leaving fire-prone landscapes exposed. Without a proactive system in place, those fires had room to grow.

That was the reality before the ICT for Adaptation to Climate Change and Forest Fire Management initiative stepped in. Backed by the MKCF and implemented by AFoCO in partnership with Cambodia and Viet Nam, the project had a bold goal: transform forest fire management through digital innovation, institutional reform, and regional cooperation.

Digital firewall

In Cambodia, the project catalyzed the formation of the first-ever Technical Working Group on Forest Fire Management. This group filled a longstanding governance gap by bringing together ministries and agencies to coordinate, formulate policy, and plan strategically. For the first time, Cambodia had an institutional anchor for long-term, proactive fire management.

At the same time, the project introduced an innovative tool: the ICT-based Forest Fire Management System (FFMS). Installed at Cambodia's Forest and Wildlife Training Center and Viet Nam's Region 1 Forest Protection Department in Quang Ninh Province, the system integrates satellite imagery, forest inventory data, and real-time weather information. Drawing on the Republic of Korea's proven data-driven model and tailored to local conditions, FFMS provides automated fire danger updates and simulates fire spread scenarios.

To power this system, Automatic Weather Stations (AWS) were installed, feeding hyper-local meteorological data into the FFMS to generate accurate, localized forecasts and risk alerts.

But the project didn't stop at hardware. A two-phase training strategy—one for government officials and another focused on practical application—ensured that forest rangers at all levels could effectively use FFMS and mobile tools. They were trained in fire behavior, firefighting techniques, GIS-based vulnerability mapping, and how to use smartphone-compatible applications for real-time monitoring and response.

"This system allows us to see the fire risk before it happens—and act faster than ever before," said a Vietnamese forest officer.

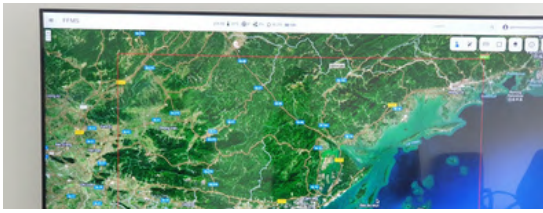
The project also laid out policy recommendations to guide national adoption of ICT tools, ensuring that technological upgrades are backed by supportive governance.

From reaction to readiness

Forest fire management in Cambodia and Viet Nam is now moving decisively from reaction to readiness.

Cambodia's new working group has become a hub for institutional coordination and strategy. The FFMS and AWS are now embedded in government systems, helping forest agencies anticipate threats, simulate responses, and act before fires escalate. And because these tools are locally owned and operated, the change is built to last.

The project has forged a strong foundation, but its strength lies in the growing momentum within local institutions, empowered by data, training, and teamwork.



One lesson stands out: technology alone will not stop a fire—but paired with institutional reform, it can transform how we prepare, respond, and recover.
This model shows how dedicated technical bodies, like Cambodia's working group, combined with data-driven systems, can overcome long-standing challenges in forest governance. The next step is to bring these systems closer to communities, ensure long-term policy financing, and deepen regional knowledge exchange among Mekong and AFoCO member countries.

The project is documenting lessons learned and producing knowledge products to share these insights more broadly. With continued investment and collaboration, it offers a replicable blueprint for other countries grappling with climate change and environmental risks.

Priority Sector: Information and Communication Technology (ICT)

MKCF CALL 6

Information and Communication Technology (ICT) for Adaptation to Climate Change for Forest Fire Management in Mekong Region Project

Country of Implementation:
Cambodia and Viet Nam

Duration: 2023/02/15 - 2025/11/15

Contacts

Dr. Junghwan Park
Senior Project Manager
Project and Program Division
Asian Forest Cooperation Organization
Republic of Korea
Email: junghwanpark@afocosec.org

Keywords

#ICT INNOVATION
#FOREST FIRE MANAGEMENT
#AFOCO COLLABORATION
#CAPACITY BUILDING

ON THE SAFE SIDE: CIVIC ACTION FOR CROSS-BORDER COMMUNITY SECURITY

In the age of greater mobility and connectivity, it's difficult to imagine that cross-border issues continue to put people's lives at risk. But along the winding banks of the Mekong River—where Thailand meets Lao PDR and Cambodia—something more troubling than the current has been flowing: cases of non-traditional security (NTS) threats. Human trafficking, drug smuggling, and illegal immigration have crept through 44 border districts spanning 17 provinces, threatening the safety, dignity, and cohesion of communities quite literally living on the margins of these countries.

Recognizing that enforcement alone couldn't untangle this web of illicit activity and transnational crime, the Department of Provincial Administration (DOPA) in Thailand, under the Ministry of Interior, launched a bold and community-rooted initiative in 2014: the *People-to-People Connectivity (P2P) Project*.

It marked a decisive pivot away from conventional security responses. Rather than relying solely on military and police, DOPA envisioned empowered citizens and responsive local officers as the first line of defense.

The project had a clear mission—one that went beyond mere reaction and enforcement. It sought to build community awareness and deepen public understanding of non-traditional security issues, while equipping local officers to work hand-in-hand with residents in addressing these complex challenges. At the same time, it aimed to establish best practices for fostering resilient cross-border communities, grounded in trust, cooperation, and shared responsibility.

A decade of action

Over the last 10 years, this approach has transformed what was once a top-down process into a grassroots movement. Implemented annually across 128 border districts, the P2P Project has cultivated informal communication, trust, and cooperation between Thailand, Lao PDR, and Cambodia. The results are tangible: issues are resolved more quickly, and communities are finding unity and peace through shared responsibility.

A critical piece of this effort lies in the NTS-Mekong Watch Project, a cornerstone of DOPA's approach to community engagement. Offline, it materialized in the form of NTS-Mekong Watch Coordination Centers (NTS-MWCCs)—established in 44 border districts. These local hubs serve as accessible, community-based reporting centers where citizens can directly report law violations and suspicious activity. Online, the launch of www.NTS-Mekong.com expanded the reach even further, allowing residents to report incidents, access information, and support coordination with relevant agencies.

But engagement doesn't stop at reporting. Through awareness campaigns and targeted training, local officers and community members alike are becoming literate in non-traditional security threats. With this growing knowledge base, communities are no longer passive observers—they are active participants, co-creators of a safer, more responsive Mekong region.

DOPA's efforts have extended deep into the field. In site visits to 27 districts in eight provinces—including Chantaburi, Sa Kaeo, Bueng Kan, Chiang Rai, Loei, Ubon Ratchathani, and Nan—DOPA teams met with district officers and task forces at NTS-MWCCs. These exchanges revealed a strong sense of local unity and a richer understanding of the border context, informing more practical and effective responses.

Beyond safety and security

Still, challenges remain—especially in areas where borders are tightly demarcated and the psychological distance between neighbors persists. Here, taking the initiative down to the village level is not just helpful—it's essential. Familiarity, shared purpose, and face-to-face dialogue can shrink divides and build lasting resilience.

"Developing border areas comprehensively—encompassing security, society, economy, and culture—is a crucial mission," said Mr. Unsit Sampantharat, Director-General of the Department of Provincial Administration. "NTS-Mekong Watch is our dedicated effort to manage border areas inclusively, focusing on civic engagement to empower local communities in addressing non-traditional security challenges in the Mekong region," he added.

P2P isn't about playing cops and robbers on an international scale. It's about stitching together the social fabric of a region—thread by thread, person by person. It's a quiet revolution at the grassroots level, resisting the dark undercurrents of trafficking, smuggling, and fear with the strength of connection, cooperation, and community spirit.

Priority Sector:
Non-traditional Security Challenge

MKCF CALL 6

Enhancing People-to-People Connectivity to Address Non-traditional Security Challenges in the Mekong Region Project

Country of Implementation: Thailand

Duration: 2023/01/16 - 2025/01/15

Contacts

Thannicha Lermtong
Project Manager
Department of Provincial Administration
Ministry of Interior
Thailand
Email: mkcfdopa@gmail.com,
foreignaffairsdopa@gmail.com

Keywords

#NON-TRADITIONAL APPROACH
#CIVIC DEPARTMENT
#PEOPLE-TO-PEOPLE CONNECTIVITY
CAPACITY BUILDING

MEKONG INSTITUTE

Mekong–ROK Cooperation Fund

About Mekong Institute

The Mekong Institute (MI) is an intergovernmental Organization owned and operated by the six countries of the Greater Mekong Subregion—Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and Yunnan province and Guangxi Autonomous Region of the People's Republic of China. MI promotes regional development, cooperation, and integration through capacity development programs and projects across three thematic areas: Agricultural Development and Commercialization, Trade and Investment Facilitation, and Sustainable Energy and Environment.

About Mekong-Republic of Korea Cooperation Fund (MKCF)

Following the launch of the Mekong–Republic of Korea (ROK) Partnership in 2011, the Mekong–ROK Cooperation Fund (MKCF) was established in 2013 to support development initiatives in the five Mekong countries: Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam. Between 2013 and 2020, the Fund concentrated on six key sectors. Under the current Mekong–ROK Plan of Action (2021–2025), the Fund's priority areas have been expanded to include culture and tourism, human resource development, agriculture and rural development, infrastructure, information and communication technology (ICT), environment, and non-traditional security challenges. The Fund is administered by the Mekong Institute (MI), which acts as the Fund Coordinator. In this role, MI is responsible for reviewing Expressions of Interest (EOIs) and full project proposals, overseeing fund disbursement, monitoring project implementation, providing technical guidance, conducting site visits, and maintaining close coordination with relevant government stakeholders in the Mekong countries.

GET IN TOUCH WITH US

Mr. Madhurjya Kumar Dutta

Director of MKCF, and
Director of Trade and Investment
Facilitation Department (TIF)
Mekong Institute

dutta@mekonginstitute.org

Ms. Wen Hao

MKCF–PRIME Project Manager
Trade and Investment Facilitation
Department (TIF)
Mekong Institute

haowen@mekonginstitute.org

www.mekonginstitute.org
www.mekongrok.org

mekong-institute

mekonginstitute.org

MekongInstitute