SUMERNET

Mekong Media-Research Partnership 2021-2022

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Financially supported by Sweden Sverige

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This publication was funded by The Swedish International Development Cooperation Agency (Sida) through the Sustainable Mekong Research Network (www.sumernet.org).

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This document is an output from projects funded by the Swedish Government through Swedish International Development Cooperation Agency (Sida) and delivered through the Sustainable Mekong Research Network (SUMERNET). However, the views expressed, and information contained in it are not necessarily those of or endorsed by the Swedish government, SIDA, or the entities managing the delivery of the SUMERNET and its programmes, which can accept no responsibility or liability for such views, completeness or accuracy of the information or for any reliance placed on them.

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Introduction

In 2021-2022, SUMERNET provided **8 grants** worth USD 2,800 to selected journalists in the Mekong Region to produce and publish impactful stories that highlight critical environmental sustainability issues related to SUMERNET research projects.

This booklet is a compilation of these environmental stories in the Mekong Region.

SUMERNET research and media partnership for environmental policy

Achieving effective collaborations among researchers and the media is a key goal for SUMERNET work in the Mekong Region.

Researcher-media collaborations help in reaching information to key policy audiences, develop scientific narratives that can reach a wider audience, and ground our research results in local and regional needs.

When we strengthen partnerships among media and research partners, we enhance the media's capacity to report on environmental issues better through providing information, networking opportunities, and building their capacity for scientific reporting.

Water insecurity and the media

In its current phase of work titled SUMERNET 4 All (S4A), SUMERNET is focusing on "water insecurity" by developing and co-creating knowledge and supplying syntheses, processes, tools and approaches that enable people to adopt and apply it. Delivering results requires a clear understanding of what different pathways to impact S4A can effectively pursue.

Researchers seek to produce knowledge and evidence on the causes, impacts and solutions to address environment and development challenges in the Mekong Region. But they do not always have the capacity, networks and connections to communicate their findings to non-academic audiences effectively.

The media thus becomes a critical partner to support disseminating academic knowledge and evidence on critical sustainability issues including climate change, ecosystem degradation and poverty to the policymakers and public.

A powerful political actor, the media functions as the primary conduit between those who want to influence policy and policy makers who decide the scope of political discourse, including solutions and adoption. Journalists and news editors play an important role in shaping policy agendas by steering the conversation on critical issues towards immediate attention and action from policymakers.

Environmental sustainability is one of the key issues being covered by the media, but they often face a multitude of challenges when it comes to science reporting. Journalists do not always have environmental and scientific training that is necessary to unpack and report on complex environmental stories. Media outlets also have limited resources to support extensive environmental reporting.

Media-research partnership fund: Enhancing collaboration with SUMERNET researchers

This media-research partnership fund was envisaged to benefit both the journalists and SUEMRNET researchers in the Mekong Region.

The media-research partnership fund aimed to enable collaboration and close interactions between SUMERNET researchers and the journalists.

We are aware that the media needs to publish stories to their audiences. They need to provide writing and multimedia on science, but they also need complex scientific topics to be unpacked.

Journalists often do not have much time or resources, or a deep scientific background to unpack scientific topics. The researchers can help provide the media with the science, while also learn from the media what the needs of non-academic audiences are, how to present complex issues and topics, and how they can "package" scientific findings to reach a general audience through a range of non-academic products.

This media-research partnership fund was intended to help both researchers and journalists collaborate better, to seek this common understanding of what kind of "stories" can be made from S4A's ongoing research projects, and in turn, enable researchers capacity at communicating and producing non-scientific outputs.

The partnership fund interactions will also be different from "trainings" which are often more short-term where after the training the journalist is not available to help researchers apply what they learnt in their practice.

The partnership sought to create a close, on-the-ground cooperation between the media and the researchers in the project teams, so that both sides can get an enhanced appreciation and understanding of each other's work, science communication challenges, and suitable story solutions.

Objectives of the media-research partnership fund

Strengthen the media-research partnership to help further sharing of knowledge and evidence on critical sustainability issues to policemakers and the general public

Enhance the capacity of the researchers on communicating with non-academic audiences

Build media capacity on contextual and in-depth reporting of environmental topics

Raise the visibility of S4A and promote the network's work in the Mekong Region

Acknowledgments

The SUMERNET Secretariat would like to convey our highest appreciation for the work of the media partners to provide the stories that are compiled in this booklet.

Grateful thanks to colleagues in the SUMERNET Secretariat, and in particular, Dr. Chayanis Krittasudthacheewa (Programme Director), Agus Nugroho (Programme Manager), and Unchulee Lualon (Component 4 Programme Assistant), for continuous support with the media grants work.

Media Products

Eight journalists and multimedia producers from Thailand, Vietnam, Myanmar and Cambodia produced different written and multimedia products focusing on multiple issues in the Mekong Region such as groundwater management, community-based disaster risk reduction, community rights in the decision-making process of hydropower development, impacts and solution for flood, water insecurity and COVID-19 effects, wetland water management, gender inequality in the water management decision making process.

The following is a compilation of their work.

Media Products | Story 1

Groundwater scarcity drives Siem Reap hotels, temples and farmers to compete.

February 22, 2022

By Jack Brook and Choulay Mech, Cambodia

Siem Reap farmer Thon Thin starts up a water pump machine which draws water from a storage pond in January. He uses the pump to water his crops during the dry season when there is little rain.
Photo by Choulay Mech for Southeast Asia Globe.

The pools surrounding the Angkor Wat not only provide excellent opportunities for sunrise reflection photos, but also are essential for keeping the world wonder standing.

The Angkor Archaeological Park's system of ancient reservoirs and channels stabilise the temples built atop sandy soil and groundwater underneath provide additional support.

For the hundreds of families living within and around the forests of the Angkor temple complex, use of this water is restricted by the Authority for the Protection of the Site and Management of the Region of Angkor (APSARA).

"The temple could collapse if you do not have enough groundwater," said Phoeurn Sokhim of the APSARA water management department. "Most of the big temples depend on the groundwater as the foundation."

The moats, reservoirs and canals within the Angkor Archaeological Park are overseen by APSARA and, alongside underground water tables, are important for stabilising the bigger temples.
Photo: Jack Brook for Southeast Asia Globe

Yet there is not enough groundwater to meet competing needs in and around the city, nor is there currently sufficient surface water storage from rivers, lakes and reservoirs to provide an alternative, local authorities and researchers say. Most communities and businesses around Siem Reap depend on groundwater.

Em Yean lives within the zone controlled by APSARA and said he uses the rain to water his fields instead.

"Even though there are water canals in Angkor, we cannot pump them into our rice fields because the APSARA authorities do not allow us to use it," the seventy-seven-year-old said.

Em Yean lives in the forest near the Angkor Wat and is unable to access ground or surface water from the area without permission from APSARA.
Photo by Choulay Mech for Southeast Asia Globe

The regulations are a reminder of Siem Reap's water scarcity issues. APSARA is one of several local authorities attempting to manage a limited water supply which must balance maintaining the UNESCO world heritage temples, irrigating fields for surrounding farming communities and supporting a city where several million tourists visit in non-pandemic years.

The Cambodian government has outlined goals to connect 100% of urban households to clean drinking water by 2025. At the same time, Siem Reap aims to significantly increase tourism in the coming years, which could further sap groundwater supplies.

"Groundwater resources are 'out of sight, out of mind' because there is a feeling of infinite use," said Dr Sangam Shrestha of the Asian Institute of Technology (AIT) in Thailand. "Many cities rely on groundwater because surface water is not available."

Shrestha is part of an AIT-led team of researchers aiming to survey the different uses of groundwater across Siem Reap to develop regulations and policies to sustainably and equitably manage an increasingly scarce water supply.

Without effective regulation and distribution policies, water access becomes unequal, said Dr. Khy Eam Eang, a hydrology researcher at the Institute of Technology of Cambodia and part of the AIT team. Hotels and wealthy families can afford to access groundwater and infrastructure but poor communities cannot. Greater coordination and planning across agencies is needed, he added.

"When we use many different sources and not any regulation, we cannot manage the condition of water well," Khy said. "We need to be able to balance groundwater and surface water usage."

Siem Reap has three main water sources: groundwater, the Tonle Sap Lake and the Angkor-era reservoir West Baray, which collects water from several rivers and stretches across a plain of rice fields and forests filled with 56 million cubic metres (1.98 billion feet) of water.

Under the control of APSARA, West Baray allocates 17,000 cubic metres (4.49 million gallons) of water per day to Siem Reap city, comprising the majority of the 30,000 cubic metres (1 million cubic feet) per day of water the Siem Reap Water Supply Authority (SRWSA) provides city residents, according to Seak Pengkeang, SRWSA deputy director general.

This is not enough to match Siem Reap city's average demand of 60,000 cubic metres per day (2.1 million cubic feet), which SRWSA expects will increase to 80,000 cubic metres (2.8 million cubic feet) by 2030.

Businesses are forced to find alternatives and back up sources,
Rambutan hotel general manager Tommy Bekaert said. Many rely on filtered water tanks, which are expensive but can help weather stretches of limited water availability.

Technically, APSARA prohibits the use of groundwater for businesses within the far-reaching protected zone of the Angkor park, but almost all companies still use groundwater, said Phoeurn, APSARA's deputy director of water management.

While the city's water system is improving, Rambutan's Bekaert said in the past the shortages caused serious challenges for businesses.

"If you were relying on city water, you would have no water half of the day," Rambutan's Bekaert said. "You're not allowed to use well water, but what do you do then?"

Most companies have wells as backup and the restrictions are not fully enforced, he explained.

Groundwater is fine for families, however when used by hotels and big businesses it will create too much stress on underground pools of water known as aquifers, hydrology researcher Eang said.

To take pressure off groundwater use, authorities are searching for ways to increase surface water storage and access.

The Angkor-era reservoir holds 56 million cubic metres (1.98 billion feet) of water and supplies Siem Reap city with 17,000 cubic metres (600,349 cubic feet) of water per day which accounts for more than half the city's current daily capacity, according to the Siem Reap Water Supply Authority. The West Baray also supplies more than 10,000 hectares of farmland with irrigation but there is not enough to meet farmer demand in the dry season, according to APSARA, which manages the reservoir. Photo: Jack Brook for Southeast Asia Globe

APSARA plans to rehabilitate the ancient East Baray reservoir, but officials noted this would require the logistical challenge of resettling thousands of people.

"In the future, the city will grow and the needs of the water will increase," Phoeurn said. "So that's why we try to restore the ancient reservoirs to be sure that in the future, even as the city grows, we have enough water to provide."

To meet this demand in the short term, the Japanese International Cooperation Agency (JICA)is helping Siem Reap construct a water purification plant capable of withdrawing 60,000 cubic metres (2.1 million cubic feet) of water per day from the Tonle Sap Lake or 21.9 million cubic metres (773,000,000 cubic feet) annually.

The plant is scheduled to be finished by the end of this year and would triple the city's water supply and meet the capacity until 2030, SRWSA deputy director general Peangkeang said.

"Pumping to supply water to the city will not cause any negative environmental consequences and exacerbate water shortage in the surrounding area because the pumping amount is extremely small compar[ed] to the hug[e] water amount of the [lake]," he wrote in an email to the Globe.

The Tonle Sap Lake and surrounding farming and fishing communities are under significant stress, as climate change, drought and environmentally destructive upstream dams across the Mekong region have led to historic low water levels in the Mekong and the lake. Largely due to upstream damming, the Tonle Sap Lake is withering away, with conservationists predicting it could **virtually disappear** in the next two decades if no interventions are made.

JICA project formulation advisor Aya Tokumoto said the agency and various government authorities conducted feasibility studies to assess the purification plant's effect on the Tonle Sap Lake and surrounding communities in 2011, **concluding** there would not be a "significant adverse impact on the environment.".

JICA will assess the purification plant's impact three years after beginning operation, she said.

Incorporating surface water to supply the city will be more sustainable for Siem Reap than relying primarily on groundwater, in part because it is easier to monitor surface water quantity and quality, Tokumoto said.

Meeting the national government's goal of connecting all of Siem Reap province's 1 million people to water by 2025 is unrealistic. It is impossible for many Siem Reap residents to gain access to clean water or connections to the public water supply, according to Massimo Maio, operations director of Water for Cambodia, which tests water quality and builds wells.

Farmers also struggle under ongoing drought to access water. Many people live too far from APSARA's canals to receive water from West Baray in the dry season, APSARA officer Roan Vichet said.

"We don't have enough water for all agriculture in the zone. So only some people along the canals do agriculture," he explained.

APSARA supplies more than 100 square kilometres (39 square miles) of farmland with water, but in the dry season can only reach around 70 square kilometres (27 square miles), APSARA representatives said.

Some officials blame the water shortage on what they claim is farmers' overuse of water during the dry season, calling for harvest restrictions to one per year.

Besides the decreasing monsoon season floods which farmers around the Tonle Sap relied on for natural irrigation, the region lacks efficient irrigation infrastructure. Only 30% of irrigation needs are met annually and only 15% during the dry season, according to the **Asian Development Bank.**

Communities outside the APSARA zone rely on rain and a patchwork of different reservoirs and irrigation networks often constructed by the farmers' themselves to sustain their rice paddies and farms. In the dry season, communities must compete with each other in unregulated efforts to capture and channel irrigation water.

In the monsoon season in early August, the villagers of Bpring gathered for their annual ceremony to seek rain for their parched fields in Chi Kraeng district, 65 kilometres (40 miles) from Siem Reap city centre.

Everyone in the village relies on rainwater to cultivate their rice fields, said Hong Chan, yogi archbishop at the Chi Kraeng pagoda.

To the percussive beat of traditional instruments, village elders swayed hands and hips in hope of stirring the weather. They called for the forest, temples and the famous Kulen mountain to come together with their ancestors to bring more rain.

On top of the spiritual appeals, Chi Kraeng farmer Thon Thin said he is switching to banana planting, which requires less water than rice.

A local NGO determined the region was not suitable for drilling, he said. Instead, villagers often dig ponds on their property to store water and pump to their fields during the dry season. Thin has a pump, but most of his community cannot afford to use pumps for farming.

> ***"We need equipment to pump water out, which means we need to spend a lot of money," he said. "And because we need to spend money, that's why we cannot have a balanced price between selling and spending."***

His neighbour, 65-year-old Ont Ron, said paying 10,000 riel ($2.50) per-hour to pump water to irrigate her family's rice field in the dry season is too expensive, so they do not grow anything. For everyday use, they pump water from a nearby river.

"In order to have enough water [to farm], we need a canal and a machine," she said.

Outside the reach of the urban-focused infrastructure improvements, short of building additional costly canals and water storage systems themselves, for the Bpring villagers there is always the rain ceremony.

> ***"There is no water in the soil," Ron said.***
> ***"If we don't have water we don't know what to do."***

Siem Reap villager Ont Ron stands by a stream where her family pumps water for their daily needs. However, pumping water to irrigate their rice field in the dry season is too expensive so they only grow rice in the wet season. Photo: Choulay Mech for Southeast Asia Globe

This article was written by Jack Brook and Choulay Mech as part of the SUMERNET media grants and was published in Southeast Asia Globe and SUMERNET website.

Southeast Asia Globe Website: *Groundwater scarcity drives Siem Reap hotels, temples and farmers to compete*

SUMERNET Website: *Groundwater scarcity drives Siem Reap hotels, temples and farmers to compete*

Media Products | Story 2

Importance of community-based initiative for disaster risk reduction.

April 27, 2022
By Thinn Nay Chi Sun, Myanmar

Flood is regarded as one of the most continual natural hazards which can quickly become significant disasters. Impacts of floods increase vulnerability due to many factors such as urbanization, climate change and rapid land cover changes. Myanmar's climate is a tropical monsoon climate and often experiences heavy rainfall events. The monsoon is different in the water levels of the Thanlwin, Ayeyarwaddy, Chindwin and Sittoung which are the four major rivers in the country. Due to regular flooding in the monsoon season, systematic and effective disaster management is required to lessen the impact of flood events.

Flood has been one of the main hazards in Myanmar, with 11% of all disasters. It is most common during the rainy season which is between mid-May and October in Myanmar. A cyclone in coastal areas is the highest risk at 20 on a scale from 1 to 25. In Myanmar, cyclone affected coastal areas include mostly Rakhine State and Ayeyarwaddy Region. In 2008 Cyclone Nargis, hundreds of thousands of lives caused huge damage in the densely populated Ayewarwaddy Delta as the worst natural disaster in Myanmar history since the population has not received any warning or immediate aid.

Impact of flood on livelihoods

People in Myanmar suffer from disastrous monsoonal flooding frequently. The impacts of disasters can threaten economic development following loss of lives, infrastructure, livelihoods and financial needs which emerged from reconstruction and recovery. As flood played an important role in the agricultural system, it caused huge damage to the major crops and threatened the food security and livelihood of farmers. Agricultural land and buildings are immediately affected by floods with the means of production and loss of property.

Disaster or disruptive hazards can severely impact economic development with the financial needs arising from recovery and reconstruction. Apart from the economy, disasters affect people's psychosocial wellbeing and health and loss of household assets which can affect the quality of life.

Chronic water problems cause struggle to continue traditional farming due to climate change
Credit: The Global Climate Change Alliance Plus Initiative

Key elements for disaster risk reduction

Since disaster risk reduction can cause failure or capacity degradation which directly affects the community, infrastructure is the main component in disaster risk reduction. Roads, schools and hospitals are the key elements for the risk assessment. Roads are the major factors for transportation of goods and services and help people to evacuate from affected areas in case of emergency. Hospitals supply direct relief to affected people in crisis situations. Schools are not only important to raise awareness among parents, students and teachers, but also serve as a shelter during the flood.

Classifying vulnerable groups

Children took part over one-third of the population of Myanmar and are affected disproportionately by disasters. Children should be taught about disaster-risk information in primary schools to ensure they have life-saving knowledge. UNICEF provides training for government officials to have effective management of emergency supplies and reduce the disaster risk on the most vulnerable groups such as elderly, children and disabled persons. Furthermore, it is analyzing barriers to make adaptive and resilient national systems to commit critical social services. According to the global experience, incorporating disaster risks into social protection systems improve family and children to have better risk management, break poverty cycle and build resilience.

Gender is another important aspect of social vulnerability, starting from social systems which indirectly discriminate against women by limiting their access to schooling, employment, opportunities, healthcare and social welfare. In Myanmar, major inequalities between men and women exist especially in rural areas where women are limited to manage the households. According to IFRC in 2017, women affected by cyclone Nargis experienced high risk with sexual abuse and gender-based violence.

Effective management for quick recovery

People in Myanmar experience devastating monsoonal flooding quite often. Effective and efficient management of flood disaster risk stands on planning and preparation by ensuring the availability of supplies, shelters and emergency response. Effective disaster management should provide effective and quick recovery after a flood event. Effective and quick management of flood events depends on planning and preparation by making sure the availability of shelters, supplies and emergency response. The Department of Disaster Management, local and international organizations play important roles in producing and using timely and accurate information on flood risk.

Multistakeholder approach for disaster risk management plan

Communities are important stakeholders in disaster management. The success of any localized activity depends on the willingness and ability of the community and households to adopt supportive activities to improve the resilience. Technical assistance is required to monitor disaster risk at all levels to support planning and finance. Stronger cooperation between different stakeholders is needed to create a harmonious effort to accelerate resilience and sustainability.

Training and capacity building are essential to increase the capacity of the community-based organization and its members to lessen disaster risk. Evacuation plans need to be prepared in advance by local government, NGOs and Civil Society Organizations. Each team of the community must be provided instructions and responsibilities in the case of evacuation. Vulnerable areas and groups of people such as women, children and elderly should be defined clearly during evacuation plans. The community members should identify a familiar route to a safe shelter.

Long-term solution with a collaborative approach

Disaster risk cannot be solved by a short-term solution alone. It needs a collaboration between different stakeholders to have effective management to handle flood disaster risk. The Department of Disaster Management, international and local organizations play crucial roles in using and producing accurate and timely information on flood risk. Insufficient distribution of emergency response resources leads to having less preparation for vulnerable populations during unescapable flood events.

Risk assessment is a major component in risk management and reduction of disaster risk. Disaster management intends to reduce potential risks from floods and ensure emergency response to flood events. Governments use four phases of disaster management such as mitigation, preparation, response and recovery. By implementing these four elements, it is anticipated to increase resilience and decrease human and economic losses in a disaster risk reduction.

Role of non-profit sector in reducing disaster risk

To support national efforts, bilateral and multilateral partnerships are crucial in achieving the inclusive development goal and disaster response plan. Donor assistance is important to the country given the financial burden generated by climate change and disasters. Agencies such as United Nations branches, Asian Disaster Preparedness, CARE Myanmar, Oxfam, Red Cross and Plan International have supported crucial contributions into disaster risk management and development efforts in Myanmar.

UNDP has been carrying out a Community Based Disaster Risk Management program in the cyclone affected communities under its Human Development Index (HDI) program, targeting on large scale awareness, development of effective response and disaster preparedness plan, rescue training and early warning system. UNDP is a member of the task force to the Myanmar Action Plan on Disaster Risk Reduction as well. Under the HDI program, it has been operating and supporting community initiatives for more than 14 years in the delta region. At the community level, Village Disaster Management Committees (VDMCs) are established to manage disaster preparedness plans and implementation with communication and response protocols. UNDP developed manuals and guidelines on DRR measures for preparedness training and public awareness. It has also trained carpenters to upgrade locally applicable disaster-resistant buildings and construction of several physical mitigation infrastructure.

Technical assistance to the community

In the Ayeyarwady Delta, ActionAid and HelpAge collaborated with Action for Social Aid and Young Women's Christian Association as the main implementers while Oxfam and Plan International as technical partners on women empowerment and school-based DRR. Furthermore, HelpAge supported technical input to include older people in DRR while national partner Social Policy and Poverty Research Group performed to provide inclusiveness for disable people.

ActionAid trained community mobilizers who are young people with leadership potential and elected by the community. They examine the vulnerable groups first and find opportunities for action. They find new ways to work together as a community and coordinate with local authorities.

Village Disaster Management Committee and rescue task forces for early warning, evacuation and first aid are developed in the villages to make sure that DRR is organized in an inclusive way. ActionAid supports community members in coordination with local authorities for bottom-up planning since the collaboration between the government and citizens is crucial to improve disaster management.

Community building workshop to reduce flood disaster risk
Credit: The Global Climate Change Alliance Plus Initiative

Involvement of private sector for effective management plan

The private sector is an important supporter to climate and disaster risk reduction in Myanmar and globally. For better coordination, the government has launched the Myanmar Private Sector Disaster Management Network (MPD-Network) to improve the capacity of business associations and businesses in Myanmar and strengthen its resilience to return to normal as soon as possible after disasters. Areas of cooperation can be seen in disaster risk reduction and mitigation measures to upgrade private sector engagement. Communities should be evaluated as major stakeholders in disaster management efforts. The success of any localized intervention depends on the willingness and ability of households and communities to initiate necessary changes and improve resilience. Disaster Risk Management should be extended through community and school linkages in collaboration with relevant organizations which could provide community-based disaster risk management.

Technical and financial support for disaster risk reduction

Technical assistance is needed forthe mainstreaming of disaster risk reduction and climate change adaptation which should be strengthened at all levels to improve planning and finance. Furthermore, stronger cooperation between different sectors is needed to create an effort to increase resilience and sustainability.

Increasing the availability, accessibility and quality of risk information which covers localized impacts of climate change and hazards is important to prioritize interventions and human resources. Lack of adequate and accurate data from different states and divisions restrict the estimation of disaster and climate impacts. As a result, the risk and vulnerability rise in the disaster-prone areas. Targeted interventions are required to upgrade local capacity in managing, analyzing and storing data to ensure that all information is compatible cross-platform.

Financing climate and disaster risk management needs to strengthen policy for financing, post-disaster resource management and social protection systems which are aimed to relieve financial burdens of affected communities. Investment priorities have been outlined in the Climate Change Strategy and Myanmar Sustainable Development Plan (2018-2030). These later highlight the requirement the financial needs to support human resources and build technological capacity through training to acquire successful implementation of disaster risk management. Achieving sustainable development is interconnected with green growth which provides the needs of the population and can improve the reach of infrastructure and employment opportunities. Enlarging the collaborative and coordinated approach to climate and disaster risk management at all levels of government is essential to lessen inefficiencies arising from hierarchical and inflexible governance.

Preparation and preparedness as a community

Disaster preparedness includes activities to strengthen the ability to predict, cope and respond with the effect of a disaster. It covers precautionary activities by organization, community and household to respond appropriately during and after the event. Community-based disaster preparedness scheme at community level consists of an early warning system, evacuation and relocation plan, building temporary shelters and conducting simulation exercises and mock drills.

That will be the best if the community has already established a community-based Organization (CBO) on Disaster Risk Reduction (DRR). If not, community leaders should work together to form such an organization with the stakeholders of the community. Under the CBO on DRR, there should be sub-groups or teams to organize different management activities such as early warning systems, evacuation plans and rescues and relief operations.

Providing food supply through local church partners
Credit: Samaritan Purse

The CBO should develop a community-based Disaster Management Plan (CBDMP) with the support of community members, leaders, NGOs and local authorities. The plan should include activities which the community members need to prepare for flood. That should be a list of detailed delegation of duties so that everyone is aware of his/her own responsibilities when an emergency happens. After preparing the plan, that should be shared with the community through various ways such as posting on the notice board of religious buildings or gathering areas and announcing at the community assembly. The plan should be updated regularly at predetermined intervals to make sure to adapt and reflect the changing conditions of the climate and environment. Weather focus and warning are crucial for relocation of people to safe place and managing resources for disaster response activities.

All-inclusiveness and good practices

Good practices start with targeted training to provide to teachers and school children through the school-based DRR component of the project. The lessons should be enjoyable and easier to digest for children like creative drawing exercises to improve awareness of disaster and disaster risk management.

Enhancing awareness, knowledge and understanding can be done with a set of initiatives and activities such as training, workshops and simulation exercises. In order to raise awareness, education and communication materials, videos through social media or mainstream media, leaflets and posters should be distributed at all levels.

Development of guidelines on age and gender balance of community DRR structures, empowering teachers to train children, inclusive plan for women, children, older people and persons with disabilities and targeted training for women leadership and empowerment would be examples of good practices for DRR.

To sum up, an effective disaster risk management system is essential to save lives and reduce the losses due to natural disasters, especially in coastal and disaster-prone areas. That should be made with a bottom-up approach with all-inclusiveness measures. Team work as a community is crucial for early warning and preparedness as a whole community. Everyone should be notified and aware of the disaster so that evacuation and rescue plans can be made. There should also be a channel among the teams to provide up to date information during the flood disaster events. Some mediums such as radio, TV, audio tapes, videos, posters, billboards, booklets, community discussions and door-to-door campaigns can be used for conducting awareness raising campaigns especially in remote areas.

References

https://www.frontiersin.org/articles/10.3389/fenvs.2019.00191/full

https://www.unicef.org/myanmar/responding-emergencies/disaster-risk-reduction

Disaster Risk Reduction in Myanmar: Status Report 2020
(https://reliefweb.int/sites/reliefweb.int/files/resources/Disaster%20Risk%20Reduction%20in%20Myanmar%20Status%20Report%202020.pdf)

Manual on Flood: Causes, Effects & Preparedness
(https://themimu.info/sites/themimu.info/files/documents/Guideline_Flood%20Manual_UN-Habitat.pdf)

Emergency Response Preparedness Plan (ERPP) Myanmar
(https://sheltercluster.s3.eu-central-1.amazonaws.com/public/docs/Myanmar%20Emergency%20Response%20Preparedness%20Plan_0.pdf)

How communities in Myanmar prepare for and respond sustainably to natural disasters
(https://reliefweb.int/sites/reliefweb.int/files/resources/Ref_Doc_In_Case_of_Emergency_ActionAid.pdf)

Vulnerability and Resilience Assessment of the Ayeyarwady Delta, Myanmar: Full assessment report

Learning from Cyclone Nargis: Investing in the environment for livelihoods and disaster risk reduction, A Case Study by UNEP

Integrated Community-based Early Recovery Framework by UNDP Myanmar

This story was written by Thinn Nay Chi Sun as the part of SUMERNET media-research partnership grants and was published in the Change Magazine and SUMERNET website.

SUMERNET Website:
Importance of community-based initiative for disaster risk reduction

Change Magazine:
Importance of community-based initiative for disaster risk reduction

Media Products | Story 3

How an abundance of water can put people at future risk.

April 29, 2022
By Le My, Vietnam

For the residents of U Minh Thuong's buffer zone, Kien Giang province, Vietnam, it is only a matter of time before a livable wetland is filled with harsh conditions.

Channel 21, An Minh Bac commune, U Minh Thuong district, Kien Giang province on February 15, 2022 (Photo: Hoai Chung)

We arrived in U Minh Thuong National Park (UMT) in the middle of the dry season just to find that fresh water was still plentiful in the forest and the canals. Separating fruit orchards was either watery rice fields or ditches - sometimes deep and wide enough for 2 "vo lãi" (*) to go back and forth. Moreover, rain was not totally absent for this time of year.

(*) A common type of motor boat in the Mekong Delta.

Therefore, it is understandable that most of the farmers did not complain about their water resources during an interview with researchers from the University of Science (Vietnam National University, HCMC) on February 15th. The interview was part of a SUMERNET 4 All project titled "The role of wetlands in water security for the Mekong region" (hereinafter referred to as the Project).

The comfort zone

UMT has a core area of around 8,000 ha, surrounded by a buffer zone of 13,000 ha. While the core zone is strictly protected with a closed system of canals and dikes, the buffer zone is basically agricultural land divided by big channels with the purpose of storing water.

In the 1990s, Kien Giang allowed more than 3,400 households into the buffer zone to develop farming. Today, the number of households has doubled, according to the Statistical Yearbook 2020 of UMT District.

Born and raised in Vinh Thuan - a district next to UMT, Mr. Ly Van Tinh was among the first people to settle in the buffer zone. At the age of 69, he now has a fruitful mango orchard and a neighborhood full of his descendants and relatives along Channel 21, An Minh Bac commune. A common case in local communities: many of the new households are descendants of the first inhabitants. “This region, to be honest, is quite wonderful... there is no competition for water; everyone has decent land (to use)”, he said.

Like the majority of households in UMT, Tinh’s family spent money on drilling their own well to get groundwater for cooking, drinking and other essential needs, in addition to the custom of storing rain water. Water in the channels is available all year round for irrigation.

Thi Thuong and her husband have just borrowed money to buy a boat to go to the gardens and transport bananas (Photo: Hoai Chung)

For Mrs. Thi Thuong and her family, living right next to the core zone is more challenging. In 2000, she started a new life with her husband in UMT. However, it was not until January 27th this year that the couple and their four children officially had ... electricity to pump groundwater up to use. Before that, they had to use channel water for all activities, except for cooking and drinking.

Yet during the 40-minute conversation, never once did she express any concern about water shortage. “People shut the sluices around here; so fresh water is available all year round, thanks to which I could survive for the last 20 years”, she said with delight.

What really bothers her is the fact that “there is land, but the crops always fail”. In most cases, the excess water is to blame. “Ginger, taro, cucumbers, etc. - once flooded - will be gone; so will the fishes”, Thuong sighed.

Even though they have to work day and night to pay off the debts, Thuong never thinks of leaving UMT. “Our father gave us this land; we just keep working. Herbs and vegetables grow themselves; we just eat them. Life is easy. There is peace; there is no competition.”

In summary, these days in UMT buffer zone, it seems that water is still sufficient for the rich and the poor. But when it comes to the future, researchers assert that water shortage is unavoidable. They also warn that competition for water has been the cause of many conflicts around the world throughout history.

Bananas, mangoes, coconuts, and rice are the main crops in the U Minh Thuong buffer zone (Photo: Hoai Chung)

It all started 20 years ago

The UMT peat swamps are a freshwater wetland ecosystem, although it is located less than 50km from the sea. It is also noteworthy that the Mekong River does not flow through UTM. So where does its abundant fresh water come from? The very answer is rainwater.

Historically, U Minh as a whole (before splitting into present-day U Minh Thuong and U Minh Ha) was a low-lying area, located in a region that receives the highest rainfalls in the Mekong Delta. High rainfall and poor drainage through river channels created prolonged inundation, allowing peat to accumulate. Peat layers act like water sponges, absorbing rainwater during the May-November wet seasons and gradually releasing it during the December-April dry seasons. As a result, the flora and fauna of the forest as well as its "next door" people have fresh water all year round.

However, a catastrophic fire in March and April 2002 had burned about 90 % of the peat area of UMT. In some places, the entire peat layer was burned to the ground. In other ones, the peat thickness was also significantly reduced. The current area of peat swamp is estimated at approximately 3,000 ha (Tran Triet, 2016), a great loss compared to 5 decades ago, which was 12,400 ha documented in 1976 (Vo et al. 2010).

"Unfortunately, the remaining area of the core zone is too small, which means even if it absorbs water to capacity, there is still not enough water for the surrounding communities to use", said Dr. Duong Van Ni, an expert on Mekong wetlands who leads the Project. "This is the first precariousness that cannot be solved."

Central area of U Minh Thuong National Park on February 15, 2022 (Photo: Hoai Chung)

Besides, the potential disadvantageous weather conditions should be taken into account. Climate change is likely to make the temperature rise, hence longer dry seasons, causing the peatland to decompose and thin out. “They think life (in UMT) is very secure, but it isn’t”, Dr. Ni of Can Tho University said.

After the 2002 disaster, UMT National Park knew it would be wiser to prevent fires than to put them out. A system of dikes and sluice gates is responsible for storing water inside the core zone at the end of the wet seasons for forest fire prevention in the dry seasons. In other words, most of UMT core area has turned into permanent water bodies and the water level there is relatively independent of the outer buffer zone.

Dr. Ni concluded: “If there is a limited amount of water, priority will be given to protecting the core region, so that it won’t burn. If the core area burns, the buffer zone will also burn. Thus, the buffer zone will definitely lack water”.

(Water containers) Tap water needs to be stored to settle for a few days before useage (Photo: Hoai Chung)

First, we raise awareness

“The biggest threat is that people lose their caution, because everything is normal and they are so overconfident that there is nothing to worry about. Therefore, when changes occur, such as climate change, they will be the most vulnerable group”, Duong Van Ni explained why the Project involved such a seemingly water-secure area.

He compared UMT with Ben Tre province, where there have been several events of freshwater shortage. Ben Tre is, understandably enough, better prepared to face water scarcity in the near future. Meanwhile, in UMT, “the public have no experience, but the local authority is even more inexperienced, and there is no infrastructure needed for clean water supply”.

According to IUCN’s “Climate Change Vulnerability Assessment U Minh Thuong” in 2019, “most important climate threats to UMT’s wetlands are severe and prolonged droughts, higher air temperatures, flooding and salinity intrusion due to sea level rise”. In addition, “occurrence of extreme events, such as heat waves, strong storms, and torrential rains, will be more frequent and mostly unpredictable”. Droughts and higher air temperatures will also increase the risks of uncontrollable fires that threaten the existence of the last remnants of peat swamp forests in UMT.

The research team of the University of Natural Sciences (Vietnam National University, Ho Chi Minh City) interviewed the farmers of Channel 21, February 15, 2022 (Photo_Hoai Chung)

Meanwhile, “local people’s livelihoods are also highly vulnerable to climate adversities”, the authors wrote. “In recent years, UMT area experienced two severe droughts in 2013 and 2015 and a big flood in 2017, which caused substantial losses to local livelihoods”.

> ***“When we talk about water security, the first ‘security’ is in people’s minds… With this project, we don’t expect to do anything immediately afterward; we’d like to change how they think (about water), to make them see that they are living in an environment where risks can occur at any time.”***

Researchers believe that when people are aware of the risks, solutions already exist in indigenous knowledge. At the same time, the local authority is expected to prioritize where to invest. “Now we should stop thinking about preventing saltwater, we’d better think about storing fresh water”, Dr. Ni added, “the lessons from other provinces are out there. They won’t need to seek for a solution from any Western countries. They just need to ask the people in Ben Tre, for example”.

By April, Dr. Ni and his team had completed field surveys in the UMT buffer zone. They will use this data to design an interactive game that can engage local people in talking and learning about the inevitable risks of water scarcity.

Together with U Minh Ha National Park (Ca Mau province), UMT is one of the key sites for wetland biodiversity conservation in the Mekong Delta, while preserving the last remnants of peat swamp in Vietnam. It is an Important Bird Area (IBA) of Vietnam, a Ramsar Site and one of the Association for Southeast Asian Nations (ASEAN) Heritage Parks.

As part of the work of the SUMERNET media-research partnership fund 2022, a young journalist from Vietnam, Le My, wrote an article. “How an abundance of water can put people at future risk”, by field visits, consultations, and interviews with the local residents of U Minh Thuong buffer zone as well as the researchers from the University of Science (Vietnam National University, HCMC).

This article was published on Voice of Vietnam, online media platform in the Vietnamese language and SUMERNET website.

vovgiaothong.vn:
Càng bình yên, càng de ton thuong

SUMERNET Website:
How an abundance of water can put people at future risk

Media Products | Story 4

The perspectives of local marginalized groups upon water in the midst of COVID-19 in Myanmar

April 28, 2022
By Kyaw Nyunt Lynn, Myanmar

From Seikgyi Khanayngto, Southern Part of Yangon City. People who relied on the pond water for year-round. Photo by Le' Le" Myat (Researcher)

COVID-19 pandemic has been changing our day-to-day activities since the beginning. Water becomes an essential element, and access to clean water is crucial to reducing the risk of COVID-19. In addition, the regions where water insecurity pre-exists before the pandemic increased the need for clean water to wash hands.

Water services cannot cover a large proportion of the urban and rural population. According to **the document** "Myanmar Urban Development and Water Sector Assessment, Strategy and Roadmap" published by Asia Development Bank (ADB) 2013, the percentage of people using an improved drinking water source is characterized as 83% overall (urban 93%, rural 78%). However, the quality of water is debatable, as piped water supply systems in the main cities involve untreated surface water from reservoirs based on the Joint Monitoring Programme definition. As a result, most people in urban areas depend on untreated private water supplies, which is questionable if it meets bacteriological guidelines for drinking.

Achievement of Selected Millennium Development Goal Targets (%)

Year	Water Supply			Sanitation		
	Urban	Rural	Total	Urban	Rural	Total
1990	80	48	56	...	...	...
2000	85	60	67	79	56	62
2010	93	78	83	83	73	76

... = no data avaliable.
Source: United Nations Environment Programme and United Nations Children's Fund-World Health Organization. 2012 Progress in Drinking Water and Sanitation. Joint Monitoring Programme. New York.

Reference – Myanmar Urban Development and Water Sector Assessment, Strategy and Roadmap – Asia Development Bank 2013

Regarding the pre-existing water insecurities, COVID-19 impacts exacerbate water insecurities and make it more serious. The researchers from the Sustainable Mekong Research Network (SUMERNET) identified effective ways to enhance access to clean water for drinking and hygiene of marginalized, vulnerable people in Myanmar by listening to their stories of how they have been reacting to the impacts of the COVID-19 outbreaks. The research was done in three regions selected based on geographical locations – Pindaya township, located in the mountainous region of Shan state, Bogalay township, situated in the delta region and Seikkyi Kanaungto township, a peri-urban area of Yangon city.

Affordability, quantity, and quality

"Normally, people in Bogalay use water from the stream for domestic purposes. Some are using groundwater while some cannot afford to dig a 600-ft underground well which can cost around 1,500,000 kyats (approximately 850 USD) to access the water," Dr Nilar Aung, a lead researcher from SUMERNET, explained the pre-existing conditions of water insecurity in the region.

Although water quantity is not an issue in the delta region, the vulnerable community is already experiencing water quality issues for drinking and personal hygiene practices. They usually use stream water for cooking and drinking despite water quality being inappropriate for health. People wash their hands with this poorly treated water for the prevention of COVID-19.

Based on the report "UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water" published by the World Health Organization (WHO) in 2015, 34.5% of the population perform water treatment at home, and those treatments are carried out by cloth by 76.2%, boiling by 1.4% and filtering by 0.6%. These figures indicate that water treatment is relatively low.

Cattles are using water from the lake which is the same one used by locals for domestic and drinking purposes in Pindaya. (Photo – Dr. Min Oo)

Meanwhile, in Seikkyi Kanaungto Township, located in the southern part of Yangon city, people are face issues related to water quantity and affordability. The township is mainly rural, underdeveloped; and informal settlements are being formed. "Every summer, water shortage usually occurs, and people are heavily relying on water trucks donated by the patrons or philanthropists before the pandemic," said Dr Nilar. The quantity of clean water is scarce, even when they get access to clean water. Informal settlement groups have more experience with water shortage than others, so they have to use water from the Yangon River and ponds for drinking during the period of COVID-19.

In Pindaya township, located in the mountainous region of Shan state, the government can only provide water by filling the concrete storage tank somewhere in the middle of the village. People have to fetch water by themselves in line with COVID-19 guidelines. "The local people in this area understand the value of water due to the recurring water shortages, but they require capacity and knowledge to improve water security," Dr Min Oo, a research assistant who engaged with locals in Pindaya, shared his experiences. He conducted interviews with local authorities and online surveys to assess the research.

> *"Every summer, water shortage usually occurs, and people are heavily relying on water trucks donated by the patrons or philanthropists before the pandemic."*

Concrete storage tank in Bogalay suburban area. Photo by Dr. Nilar Aung

From his interview with a local expert, most locals don't think to oblige the rules due to the quantity of water they retain. "They usually re-use the masks without even rewashing them and cannot afford new masks because of their poor income," he explained based on the interaction with the local community. Even the locals exposed to someone with COVID-19 routinely go to the communal lake where all the people in the vicinity rely on for domestic and personal use. Consequently, the locals have double pressure on their water security during the pandemic.

Challenges for marginalized and vulnerable people

The government have organized programs to mitigate the impacts of COVID-19, such as educational talks, knowledge sharing in terms of articulation, and awareness of the pandemic. Based on the interviews conducted by the researchers, the most effective way to educate the locals is by amplifying the awareness of how to handwash and use hand gel and masks through social media. COVID-19 education and updated information, including confirmed cases and death tolls, were regularly announced to local people twice a day in the downtown area.

Nevertheless, the locals are reluctant to oblige to the COVID-19 restrictions as they struggle to get minimum incomes in their daily lives. Most marginalized and vulnerable people are do not have access for receiving government support regarding valuable information and medical equipment.

According to the surveys performed by the researchers, respondents who were more socially insecure were more likely to be facemask washing water insecure and handwashing water insecure. Therefore, social relations are imperative for access to water for washing.

Unaware respondents who claimed to have "never heard of COVID-19" can be found in upland, in this case, Pindaya. Thus, inhabitants are less likely to adopt good handwashing practices as a consequence of less exposure to public health campaigns in remote locations.

> ***"People from the upland are using water from the communal lake for multiple reasons such as domestic purposes, farming, personal hygiene and drinking purposes. That's why they value their lakes but don't know how to work together and manage to improve water security in an integrated way,"***

Dr Min Oo stated his thoughts on local capacity:

"Due to being used for multiple purposes, the quantity and quality of water are deteriorating. Therefore, enhancing the local knowledge capacity in a collaborative way can improve the water security, which can be helpful for unprecedented crises like the COVID pandemic," he suggested.

From Seikgyi Khanayngto, southern part of Yangon city in summer time . People who relied on the pond water for year-round. Photo by Le' Le' Myat (Researcher)

This story was written by Kyaw Nyunt Linn as the part of SUMERNET media-research partnership grants and was published on Myanmar Water Portal, the Change Magazine and SUMERNET website.

Myanmar Water Portal:
The perspectives of local marginalized groups upon water in the midst of COVID-19 in Myanmar

SUMERNET Website:
Perspectives on water insecurity challenges of local communities in Myanmar in the midst of COVID-19

Media Products | Story 5

Wetlands save water for farmers in Vietnam

June 27, 2022
By Thuan Sarzynski, Vietnam

Before its rapid development in the 19th century, the Mekong delta was inhabited by a few thousand people taking advantage of its rich natural ecosystems to live. The delta was a large wetland of swamp forest ecosystem full of fauna and flora providing food to its dwellers.

Not much of the wetland is left today, but its few remnants still make people's lives easier. The wetlands protect the farmers living in its surrounding against droughts and floods, two foes becoming more common with climate change.

In U Minh Thuong, a protected wetland in the southwest of the Mekong delta, farmers forget that water becomes scarcer around them and that climate change can decrease rainfall and threaten their lives.

U Minh Thuong National Park

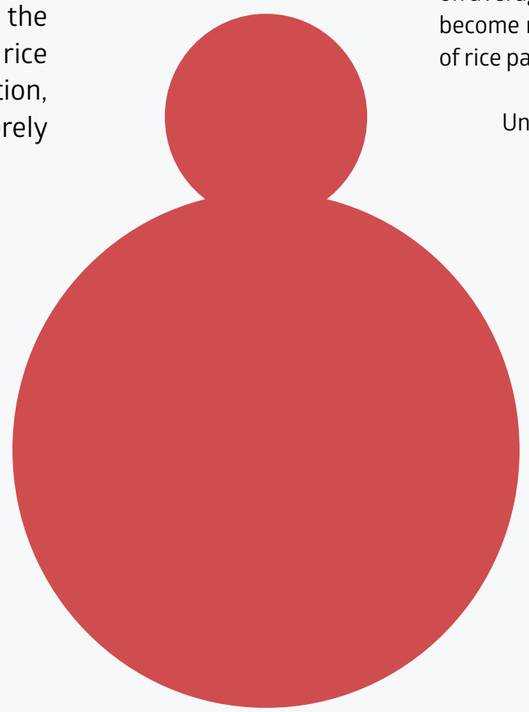
U Minh Thuong, the last remnant of a green past

In the last 200 years, first the French, the Americans and then the Vietnamese themselves converted the wild and lush wetlands into rice paddies and fruit orchards. The construction of dykes for flood protection, the expansion of waterways, roads and canals for irrigation have severely decreased the area of wetlands.

The conversion of the Mekong delta natural ecosystems into a giant food factory has allowed Vietnam to become the **world's second-largest rice exporter**, and the **world's fourth exporter of fish and shrimps.**

From an area of 4 million hectares of wetlands in the 1800s, only 68,000 hectares remain now, mainly as primary swamp forests. This remaining area of wetlands in the delta represents less than 2% of what it was two centuries ago, and today it is still under the threat of agricultural expansion and climate change.

U Minh Thuong National Park was established in 2002 and was recognized as the world's biosphere reserve by UNESCO in 2006. The natural reserve hosts 24 species of mammals, 226 species of wild plants, 185 species of birds. Due to its peculiar wetland ecosystems and abundant fauna and flora, U Minh Thuong National Park became a Ramsar site in 2015 and received international recognition for the conservation value and importance of its wetlands. The national park is divided into two zones: a pristine core zone made of 8,000 ha of open swamp and Melaleuca forest, and a buffer zone of 13,000 ha inhabited by farmers.



In recent years, climate change has made the weather unpredictable; for example according to the weather station in Ca Mau province, since 2015 rainfall in the dry season has decreased on average by 10% — 40% and the average temperature has increased as well. Droughts have become more common and extreme, like in the 2018–19 dry season where 20,000 hectares of rice paddy were damaged by salt intrusion as a consequence of the low level of freshwater.

Unlike farmers living near the coast, in areas prone to salt intrusion and drought, the 20 villages neighboring U Minh Thuong wetlands are protected by the water storing effect of the National Park; thus they rarely suffer from the effect of climate change. However, it is a double-edged sword as farmers are not aware and prepared to face the future impact of climate change on their lives.

"Because everything is normal, farmers [in U Minh Thuong] are too confident and don't care at all. The biggest danger is that they let their guard down," explains Dr. Duong Van Ni, the leader of the project investigating wetlands and water security.

Most projects working on water security work in areas where there are already water shortages, but Dr. Ni has chosen a place where people are rather water secure.

"In areas experiencing water shortages, people are more or less prepared psychologically, therefore when shocks occur, such as water shortage, people have a better response."

U Minh Thuong appears like a very peaceful place with luxuriant vegetation, but in fact there is no river bringing water from the Mekong. The canals surrounding the wetland are full of salt water in the dry season which comes from the sea 50 km away. People completely rely on rainwater for agriculture and their daily needs.

"So what if there is no rain?" asks Dr. Ni in his project.

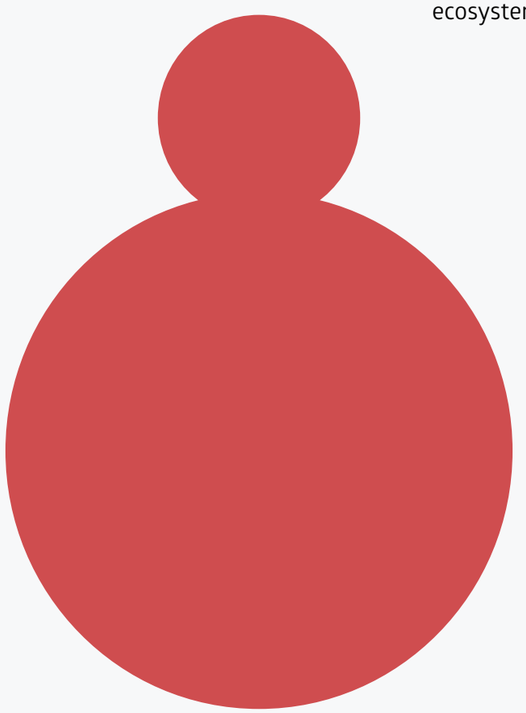
Thousands of farmers rely on U Minh Thuong to live

Most of the farmers in U Minh Thuong settled 20–30 years ago in the buffer zone of the protected area. At the time, the governments encouraged people to move from Kien Giang and other provinces to live in the wetland to develop the land. Each family was given 5 ha, 1 ha to restore the melaleuca forest and 4 ha they could cultivate for living.

As they settled in the area, farmers channeled the water from the river to their land to grow rice and vegetables. But with the intensive use of fertilizers and pesticides, this water is not potable anymore.

"About a decade ago, they used water from the channel for drinking. Then it became polluted because they farm along the channel. Now farmers have to dig a well to draw water for bathing and drinking. Some people collect water in big barrels during the rainy season and use it for drinking,"

shared Ngoc Hieu Hoang, a research assistant at Can Tho university who investigates water security around the national park.



The local government in U Minh Thuong helps farmers to buy barrels and dig wells to get water for drinking and their hygiene. For example, Nguyen Thanh Nhàn, a Khmer elder who came to U Minh Thuong in 1993 with his wife, received a plastic tank from the government to store a cubic meter of water. The couple of elders, now 79 and 71 years old, hope to soon be able to dig a well to get as much groundwater as they want for their daily uses.

Even though water can become scarce during the dry season, people rarely suffer from shortages for agriculture. The core zone of the park is made of layers of dead plants which accumulated over centuries and formed a deep peat. The peatland is a sponge, it absorbs rainwater when it rains and releases it slowly into the surrounding areas during the dry season. It is the core zone of the wetland that protects people from water shortages. Larger is the volume of peat in the core zone, and higher is the water absorbing capacity of the wetland. That's why people have to protect the core zone and keep it wet to prevent it from rotting and catching fires.

Over the years, farmers living on the buffer zone of the wetlands have learnt to protect the ecosystem by providing them water.

"In the dry season, farmers close the sluice gate to prevent water from going outside the park. They want to prevent fires in the park, so they keep the water in the core zone,"

says Hieu, in 2004 a large fire happened in the core zone and burnt a large volume of peat.

Dr. Ni, professor at Can Tho University, has observed the slow shrinking of the wetland. “When I went to survey it in the 80s, it was 4 m thick. Now it’s only 1.5 m at the thickest place. The water absorption capacity of the wetland is only a quarter of what it was in the old days,” says Dr. Ni who has a lifetime of experience working in the delta wetlands.

Over the years, farmers living on the buffer zone of the wetlands have learnt to protect the ecosystem by providing them water.

“In the dry season, farmers close the sluice gate to prevent water from going outside the park. They want to prevent fires in the park, so they keep the water in the core zone.” says Hieu, in 2004 a large fire happened in the core zone and burnt a large volume of peat.

The water absorbing capacity of wetlands make them very efficient at keeping farmers safe from water insecurity. Farmers also know that their lives rely on the core zone of the wetland to store freshwater from the rainy season and release it in the dry season.

“Only when the core zone is full of water, do people take the water. People also close the sluice gates to keep freshwater there all year round. Because of this, we were able to live 20 years here,”

says Thi Thuong, a Khmer farmer who lives off fish farming, banana and ginger cultivation.

A canal in U Minh Thuong National Park

Yet, farmers are unprepared to face climate change

The apparent safety of the farmers living near U Minh Thuong wetlands, makes it difficult to raise awareness of future problems created by climate change. While farmers in drought prone areas get support from local authorities and know what to do in case of water shortage or flood, the farmers in U Minh Thuong have a peaceful life and are not prepared for the effect of climate change. Even though few have heard of climate change, many have observed a change in the weather, like Lý Văn Tình a 69-year old who arrived in the wetland 40 years ago:

“Now the weather is changing, it’s warmer than 10 years ago. Before it was already raining [in April] and it was sunny but not hot. Now when it rains, the sun is still harsh. The rain used to cool down in the afternoon, now it rains but the sun is as intense as when it hasn’t rained,” he says.

Despite the changes in weather, Lý Văn Tình is not much afraid of climate change, but rather of the slow decrease of the underground water reserve:

“The most worrying thing is the information saying that by 2030, the level of underground water will decrease. I worry about that because then there won’t be agricultural production anymore.”

Very few realize that their environment is changing. Compared to other communities where drought is common and people are prepared, the villages in U Minh Thuong have little or no experience of water shortage.

“The authorities at all levels do not have the experience to organize and provide clean water distribution for a community of several thousand people. Compared to Ben Tre [another province in the delta], where they had 3–4 times a freshwater shortage, and where the government has a very good experience of how to mobilize donors and NGOs, as well as what to buy, what to do, and to whom to give. In U Minh Thuong, people have no experience, the local government is even more inexperienced. There is no clean water supply system,” explains Dr. Ni, “so my biggest hope is to change people’s minds,” he concludes.

The game to change minds and get people ready to climate change

If people realized that water is lacking, they will use the traditional knowledge of each person and community to adapt, they will dig ponds and prepare jars to store rainwater — Dr. Ni shared. For people who have lived in an area where rainfall was abundant, it's not easy to imagine that rain and sun will be erratic in the future and that water won't be available anymore.

It is important to show people what might happen if rainfall drops and there is a shortage of freshwater. Dr.Ni and his team use a game simulation to help farmers and local authorities to realize the changes. The game is based on the data collected during surveys and it goes through different rounds of redesign to make sure it simulates well the real-world situation.

> ***"We will bring villagers to play the main activities, manage the water and let them see what would happen if they grow more [rice]," says Dr. Pong Chai who is an expert in game simulation.***

The researchers will record the different actions and behaviors of the participants and compare those with the real data. Once the game fits the real-world situation, the researchers can introduce a new scenario to players, for example, a drought.

> ***"We expect people will understand more future possibilities and discuss local policies. We can involve more stakeholders to play in the game, for example in the second gaming session we will have more policymakers," says Dr. Pong Chai.***

In a past study, Dr. Pong Chai simulated protected areas and made farmers realize that they should improve agricultural production instead of expanding their land in the forest and risk going to jail. He also convinced farmers to analyze their soil to improve fertilizer use.

> ***"We try to create a common view: people learn from each other; we expect to share individual behavior. From this, the full system can improve," Dr. Pong Chai concludes.***

At the end of the game, participants can realize how their environment might change and how it can impact their lives. Farmers can change their behavior; local authorities can anticipate a drought relief plan even in areas where drought is yet common like U Minh Thuong.

It's all about preparing minds to collect the knowledge to adapt to climate change.

> ***"Many leaders say we should learn the model of the Netherlands, or Israel. No, the greatest learning is learning about ourselves, our past, and why we exist in that context... if we combine that knowledge with the Dutch and Israel experiences to transform into its own, then that can really help us to stand," says Dr. Ni.***

This story was written by Thuan Sarzynski. as the part of SUMERNET media-research partnership grants and was published on medium.com, local Vietnamese magazine and SUMERNET website.

medium.com:
Wetlands save water for farmers in Vietnam
by Thuan Sarzynski | Environmental Ideas

SUMERNET Website:
Wetlands save water for farmers in the Vietnam Delta

Media Products | Short films 1

Recognizing community rights in decisions on Mekong hydropower development

May 16, 2022
By Tipakson Manpati, Mingkhawan Thuemor and Decha Khambaomueang, Thailand

A group of independent videographers and contributors travelled along the lower section of the Mekong River and to some riverside villages in the Northeast to observe and document the impacts of the dams upstream. They have also learned that solutions lie in people's inclusion and participation, transboundary impact assessment, and alternative energy sources

Drastic ecological change of the Mekong is linked with hydropower development. Water fluctuation due to the operation of upstream dams is indicated by the fish species and their stocks declined. In support of SUMERNET, we visited two communities located along the Mekong River.

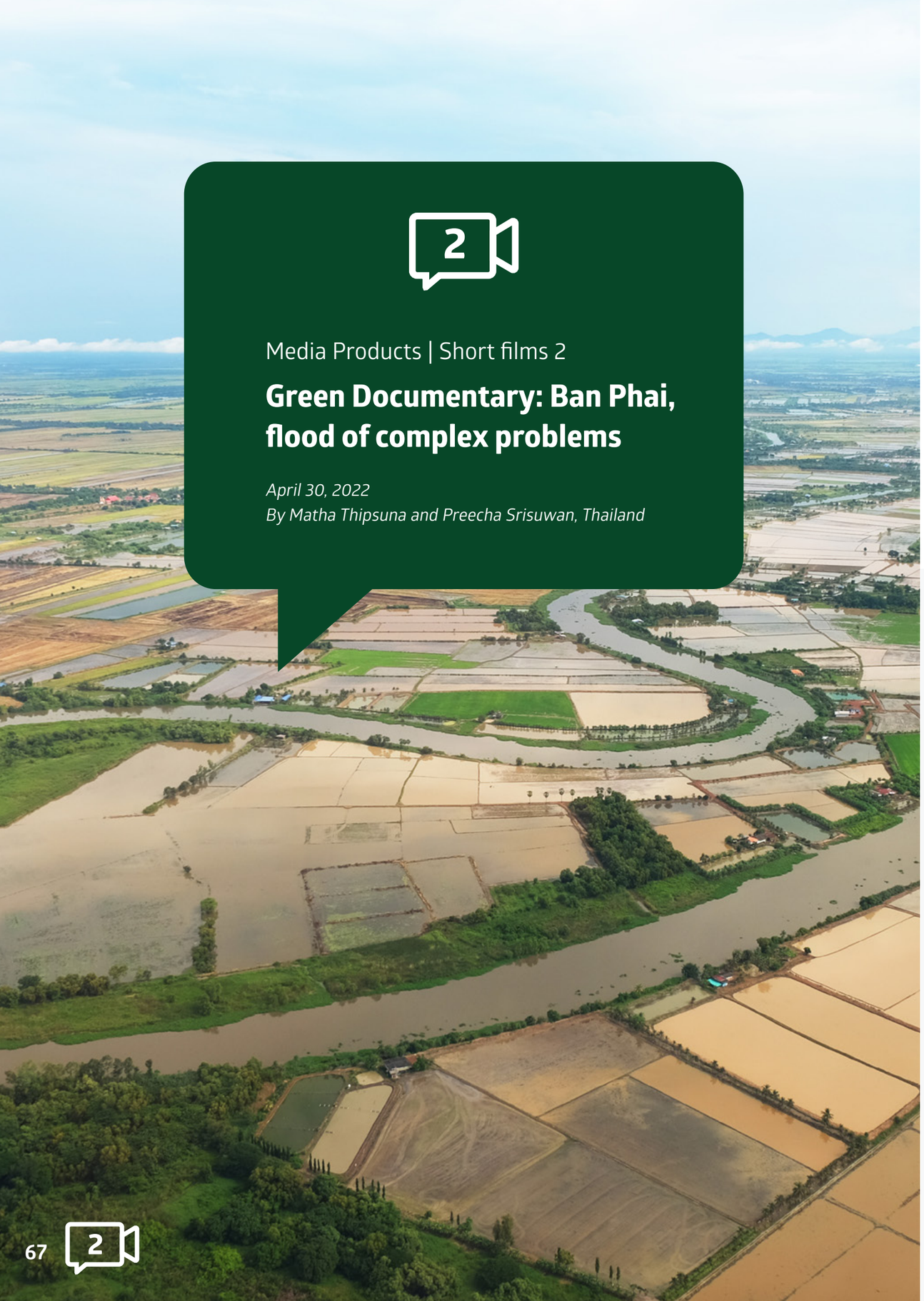
"The first community is in Chiang Khan District, Loei Province bordering with Laos and the nearest downstream area in Thailand to the Xayaburi dam – the first dam in the lower Mekong mainstream completed in 2019. The second community is in Ubon Ratchathani – which is the last Province in Thailand before the Mekong flows into Laos territory.

"Planned dams on the Mekong are also being questioned if it is necessary or not while better energy solutions exist such as solar, wind and biomass. Regional water governance is needed to ensure community rights and an equitable pathway for the Mekong people, especially for those who depend directly on this transboundary, shared and common resource."

Mingkhawan Thuemor, Decha Khambaomueang and Tipakson Manpati produced this documentary that was published on The Isaan Record, Prachatai English, Bangkok Tribune and SUMERNET website.

Bangkok Tribune: *Community Rights in the Mekong Sustainability Management | Bangkok Tribune*

SUMERNET website: *Recognizing community rights in decisions on Mekong hydropower development*



Media Products | Short films 2

Green Documentary: Ban Phai, flood of complex problems

April 30, 2022
By Matha Thipsuna and Preecha Srisuwan, Thailand

In August 2019, the tropical storm “Podul” pushed across northeastern region of Thailand, causing the flash floods that resulted in intensely loss of approximately 8,000 million baht or 250 million USD. The agricultural sector, commercial sector, and personal property were altogether damaged. Ban Phai District at Khon Kaen Province was one of the most affected area. The flood levels heighted up to 6 meters in urban communities, which the communities located nearby the waterways were the most affected zones. The vulnerable groups such as children, women, the elderly, the disabled, the urban poor, and the community general laborers were suffered horrifically due to lack of preparation, supports, and inaccurate beforehand impact assess from the responsible agencies.

The studies from of academicians found that the city plan was linked to the past flooding problems. Due to the fact that people in urban communities are housing densely nearby the waterways, causing the flow of water to be stuck and unable to flow normally. This results the water level to be risen totally higher than usual and can be drained slowly because the water path is blocked by various structures instead of the same old past immerse flooding passage. The academicians view the mentioned complication as an important issue that must be solved correlatively by many agencies with different authority. Unsuccessfully, they discovered that the laws of each agency do not coordinate in the same direction. As a consequence, this becomes a huge obstacle in solving problems.

The past flooding in Ban Phai district affected 26 communities and 1,448 households. The urban poor in the waterfront communities received the hardest hits. Hence, the academicians have planned to design the solutions by using Ban Phai area as a study model site in order to reduce the impact of the next crisis and to be able to prepare to deal with the initial problems according to the disaster. The field studies point out that there are many overlapping complications including social, economic, and urban development in terms of transportation and laws of agencies structures. This research project therefore emphasizes the participation of all relevant agencies and, most importantly, the community stakeholders who are precisely relate to the occurrences and consequences.

Many thanks to all the academicians from the project of Participatory Flood Risk Management: A Case for Policy Implication from Ban Phai Municipality Thailand (2021-2022), the community information providers, and all relevant agencies.

Mingkhawan Thuemor, Decha Khambaomueang and Tipakson Manpati produced this documentary that was published on The Isaan Record, Prachatai English, Bangkok Tribune and SUMERNET website.

Greennews.agency:
บ้านไผ่ อุทกภัยในความทับซ้อนของปัญหา

SUMERNET website:
Green Documentary: Ban Phai, flood of complex problems

Media Products | Podcast 1

Challenging the status quo in the Mekong Delta - a primary research

June 24, 2022
By Giang Pham and Sen Nguyen, Vietnam

The lower reaches of the Mekong River are facing impacts from a fourth year of drought conditions due to low rainfall couple with river flows affected by upstream hydroelectric dams.

This has overall resulted in the worst drought conditions in over six decades in the Mekong River, endangering the livelihoods of up to 70 million people. Vietnam, the last downstream country before Mekong River empties into the South China Sea, is no exception when it comes to water shortage.

It is not as simple as turning the tap off to save water, but also depends on plans and strategies in water decisions especially for growing rice to ensure food security.

Much of this decision-making process in water management is dominated by men in Vietnam's Mekong Delta.

This podcast produced by SUMERNET's media grantees takes us to a small border town district called Tinh Bien in An Giang province that is home to largely marginalized Khmer ethnic minority communities.

In this town, a group of female doctorates from An Giang University are collaborating with farmers and local officials to work on these topics, while challenging the status quo in the rural Mekong Delta as they go.

We interviewed this group before they concluded their research to learn their lessons that would be useful for those working in water management and gender inequality in the Mekong region to take from.

This podcast episode was produced by Vietnamese journalist, host and producer Sen Nguyen and multimedia storyteller and photojournalist Giang Pham as the part of SUMERNET media-research partnership grants.

The podcast is available on Anchor.

Anchor.fm: *Challenging the status quo in the Mekong Delta - a primary research by Vietnam and Boba*

SUMERNET Website: *Our media grantee's podcast: Challenging the male status quo in water decisions in the Mekong Delta*

Appendix

Call for applications:

SUMERNET grants for media-research partnership for environment (April - November 2021)

Who can apply ?

Media-research partnership fund will benefit to both researchers and journalists. But since the research project teams have the fund for project activities from previous calls already, only journalists (in particular younger, early-career) residing in the Mekong region are eligible to apply for this fund.

S4A is expected to have about 200,000 SEK (about USD 23,000.00) to support this partnership fund.

8 grants worth not more than USD 2,800 each will be awarded to selected applicants who need to be either citizens of, or if other nationalities need to be based in, the countries in the Mekong Region. We encourage early-career or beginner media professionals to take advantage of this opportunity.

- Journalists (beginner to mid-career, freelancers* or groups of beginner journalists who wish to collaborate).
- Multimedia producers (young, early-career) that work with photography, audio, video, and/or animation
- The application letter must be able to demonstrate that their stories will be published in an external outlet in the Mekong Region.

Freelance journalists are encouraged to provide a supporting letter of intent from an outlet or organization that will disseminate their work.

SUMERNET Secretariat based in Bangkok will support the grantees in linking with the S4A research teams who have a shared interest to cooperate with this partnership and provide scientific research to support the production of the stories. The partnership will have the overall advisory support of the SUMERNET Steering Committee members residing in the country of those relevant research projects.

Activities

1.1 Induction webinar

SUMERNET will host an induction webinar at the start of the project for both the journalists grantees and researchers to introduce the SUMERNET programme and our expectations for this partnership fund. They will get to know other team members beyond their projects and may want to coordinate with others for some joint activities if appropriate. All grantee journalists are required to attend this induction webinar.

1.2 Field visit and knowledge exchange

Since the aim of this grant is to enhance media collaboration with our researchers, we trust the researchers and journalists will share and exchange their expertise and knowledge during the grant period. We encourage the grantee journalists to guide researchers on how to simplify complicated topics or key findings to make it suitable for a non-technical audience and to produce non-academic products. In turn, the researchers will provide the insights from research projects by sharing the documents produced under the projects and providing coordination support for the visit of journalists to the project sites when the research teams conduct the field study, organize key events or other occasions as to be agreed mutually.

1.3 Story production**

Based on the knowledge gained through this partnership, the journalist needs to produce at least one of the below.

- Text-based stories with accompanying images: 1,000-3,000 words
- Short films or video interviews (6-10 minutes) with 200-word written summary
- Audio podcast: Not more than 20 minutes with 200-word written summary

While the story must relate to the overall theme of work from one or more research or joint action projects in SUMERNET 4 All (S4A), the journalist can maintain their independence in choosing the focus/angle of his/her story.

Currently, S4A is supporting 19 projects across 5 countries in the Mekong Region related to three research themes: 1. Water access, rights & allocation in times of scarcity; 2. Governance and management of flood disaster risks; 3. Transboundary interactions with water systems.

**The outputs can be either in English and/or a local Mekong Region language publication (but if produced in another language, English translations are expected to be provided by the journalist).

1.4 Reflection report preparation

The researchers will reflect on the results of this partnership in term of their experience in engagement with the journalists and whether this could help in enhancing their capacity to produce or communicate their research activities and findings for non-academic audiences. Any success or lessons learnt from this partnership will also be included in the reflection report.

How can we do match making?

Each applicant needs to review the project profiles including the 19 projects that are being implemented under S4A **(see the link)** and choose the top 3 projects that he/she wants to build the partnership with the research teams and write a story about. These selected projects should be those that include a study site from the applicant's country. This will mean the journalist can visit the study sites without any need to travel across borders, which is a challenge due to the travel restrictions in the pandemic.

If your proposal is awarded a grant, the Secretariat will approach the research teams that you have identified according to your ranking order to see if they would have a common interest in this media-research partnership opportunity. At the end, the journalist will need to work with one or two research teams. S4A reserves the right to identify another research team for the journalist if none of his/her selected teams can cooperate on this partnership.

Selection criteria for the application

The journalists will be selected through an open call and competitive process. Only journalists based in the countries of the Mekong Region are eligible to apply for this fund.

The application should be submitted along with the CV, cover letter, and story proposal. **In the cover letter, please indicate the news or web outlet where the story will be published.**

Please note the following selection criteria for the application.

Knowledge exchange/partnership: The applicant must demonstrate his/her wiliness to exchange and share knowledge and build the partnership with the research teams through this partnership opportunity. This fund is designed so that the journalists can play an important role to enhance researchers' capacity in communicating their research to the wider public.

Relevance: The story proposal must be relevant to at least one of three S4A projects selected by the applicant **(more information about all S4A projects can be found through this link).** It must explain why the chosen topic is relevant to water insecurity issues in the grantee's country or in the Mekong Region as a whole.

Angle: if the central topic has already been addressed, then the story should highlight how it is different and focus on a new worthwhile aspect of the environmental issues. Journalists are encouraged to report on these environmental issues with a science or policy lens.

Impact: The story must inform, encourage discourse and urge policy action.

Feasibility: All facets of the story proposal must be realistic and achievable within the given timeline.

Diversity: The story proposal should include as much gender, ethnic, linguistic, geographic, and cultural diversity as possible

Publishing: The applicants will need to propose where their stories (or multimedia) will be published indicating the names of the respective website or news outlet. While we realize a "guarantee" of publishing is not possible, we at least want to ensure the proposal can show a venue for publishing of the final output. All stories whether published in an external outlet or not, will also be republished (with permissions) in the SUMERNET website. But we encourage publishing in an external outlet as a requirement for the grant and to maximize the media outreach.

Grant payment and procedures

Selected journalist will be awarded not more than 2,800 USD/grant. This comprises an honorarium of USD 2,000 (that will be provided in two tranches) and not more than USD 800 to cover actual travel and related costs for the field visit to meet researchers and study sites.

The grant amount is designed to recognize that the journalist will spend at least 20 working days on the media-research collaboration.

At the end of the granting period, we will require the journalist to submit a financial report (we will provide a template) along with the needed receipts or supporting documents for reimbursement.

Application process

The journalists interested in applying for this fund should submit their cover letter, CV and story proposal via online system by 16th May 2021. Email applications will not be accepted.

For more information on the grant or S4A work, please contact:

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