



# FROM INNOVATION TO TRANSFORMATION

The Integrated Coastal Management Programme (ICMP)  
Working for a climate-resilient future for the **Mekong Delta** since 2011

Implemented by





The title of this report, “**From Innovation to Transformation**”, underlines how we aim to bring transformative change in the face of the challenges posed by climate change in the Mekong Delta. We embrace opportunities and **collaborative action** and base our work on innovations, value, and **impact for the people**.

Innovations are necessary first steps on the path to a broader and deeper transformation to **prevent and mitigate losses and damages caused by climate change and exposure to other environmental hazards**. However, they can only mark a beginning; innovation is part of a larger solution.

Transformation must follow **a path towards an integrated, comprehensive and resilient response in saving major parts of the Mekong Delta and securing the livelihoods of its people**.

Over the last eight years, the Integrated Coastal Management Programme (ICMP) has brought actors together on a path of transformation – a journey that is essential for facing the challenges of climate change in the Mekong Delta.

**Vì Đồng bằng sông Cửu Long!**





# The Mekong Delta and its opportunities and challenges

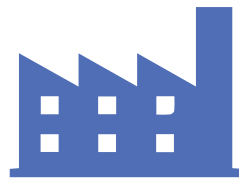
## The Mekong Delta is:



Home to more than **17 million** people.



The most important agricultural region, producing **55%** of Viet Nam's rice and providing a source of food for more than **245 million people worldwide**.



The **third largest** industrial region after the metropolitan areas of Ho Chi Minh City and Hanoi.



Threatened by **climate change** and other **environmental risks**, such as rising sea levels, subsidence of land, reduced sediment flows, storms and droughts, and pollution.



In **urgent need** of an appropriate strategy to mitigate and adapt to climate and environmental change and build up **resilience for the ecology, the economy, and the people**.

# Solutions for the Mekong Delta

## ICMP embraced the opportunities and tackled interlinked challenges by:



Strengthening coastal zones of the Mekong Delta and the resilience of its inhabitants.

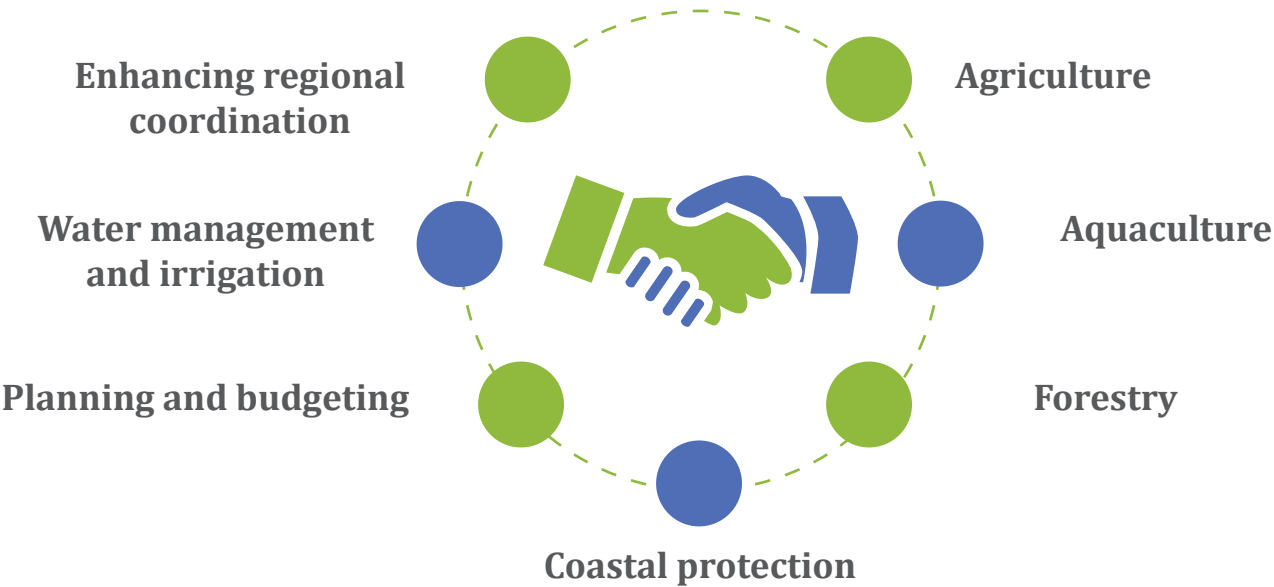


Supporting the Vietnamese authorities in preparing the coastal area for a changing environment.



Laying the foundations for a sustainable and climate-resilient development path.

## This included but was not limited to innovation in the fields of:



At the same time, ICMP worked across a broad range of cross-cutting issues, such as **promoting gender equality, digitalisation, environmental awareness-raising, and the involvement of the private sector**.

ICMP has been working for a climate-resilient future for the Mekong Delta since 2011.





## Initial remarks

Working together for a climate-resilient future for the Mekong Delta since 2011

### 01

The dynamism of the Mekong Delta

### 04

The Integrated Coastal Management Programme (ICMP)

#### 05

Programme partners and donors

#### 06

Programme description

#### 06

Key highlights of the first phase

#### 08

Key highlights of the second phase

#### 10

Major impacts of ICMP

### 12

Agriculture

### 18

Aquaculture

### 26

Forestry

### 36

Coastal protection

### 46

Digital Transformation

### 50

Water management

### 56

Environmental education and awareness-raising

### 60

Promoting gender equality

### 64

Planning and budgeting

### 68

Enhancing regional coordination

### 71

Selected ICMP contributions to the SDGs

### 74

Partnerships and collaboration

### 86

Outlook: The Mekong Delta Climate Resilience Programme (MCRP)



## Working together for a climate-resilient

Viet Nam is beginning to feel the adverse effects of climate change. This is particularly true for the Mekong Delta, the country's most important agricultural region and home to more than 17 million people. Its agricultural output is crucial for food security not only in Viet Nam but across South East Asia and beyond. Over the last decades, the Government of Viet Nam has developed the infrastructure of the Mekong Delta (roads, bridges, airports, sea ports) significantly and the economy is booming.

However, climate change is leading to rising sea levels and the loss of coastal land through erosion and salt water intrusion. Mangrove forests along the coast can protect the hinterland from floods and storms. Even though the area of mangrove forests in the Mekong Delta continues to shrink, the overall rate has slowed down in recent years. Floods and storms are likely to increase considerably in the future, meaning sound forest protection remains the utmost priority.

A reduction of the flow of sediments due to the large-scale construction of upstream hydropower generation, subsidence of land due to groundwater pumping, sand mining and unsustainable production methods in agriculture and aquaculture are just some of the challenges the Mekong Delta is now facing.

These changes threaten the future of the Mekong Delta and its ability to contribute to green growth and serve the livelihoods of millions of people in Viet Nam and the whole region.

The Government of Viet Nam is addressing these problems at central and provincial levels by adjusting legislation, introducing new technologies and adopting an investment strategy for the Mekong Delta.

The Integrated Coastal Management Programme (ICMP) was part of this broad government initiative. It was co-funded by the Governments of Australia, Germany and Viet Nam and implemented jointly by Viet Nam's Ministry for Agriculture and Rural Development (MARD) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. ICMP has contributed to the foundation for a climate-resilient future for the Mekong Delta since 2011, engaging in close collaboration with national and international partners.

Launched with the clear objective to increase the climate resilience of coastal ecosystems, the programme has been focusing on agriculture, aquaculture, forestry and coastal protection, water management, planning and budgeting, regional coordination, and a range of related activities.

ICMP supported the adjustment of legislation and policy dialogue at national level and promoted concrete innovative technologies mainly in five provinces in the Mekong Delta: Soc Trang, Bac Lieu, Ca Mau, Kien Giang and An Giang Provinces. We would like to use this opportunity to express our sincere appreciation to ministerial and provincial authorities and individuals for their leadership and guidance throughout the duration of the programme.

We are pleased to present this report on ICMP detailing its innovative and integrated approach for making the Mekong Delta more climate-resilient throughout the years (2011-2018) and trust that readers and participants of the programme will find this report of great value in documenting its successes.

## future for the Mekong Delta since 2011

Much has been written and said on the present and future challenges the Mekong Delta is facing. Many of these challenges require a coherent and coordinated planning and policy approach across national, inter-provincial, provincial and city levels. In response, the Government of Viet Nam has taken initiatives to develop and issue strategic plans, such as the Mekong Delta Masterplan, the decision to coordinate inter-provincial development in the Mekong Delta (Prime Minister's Decision 593) and supporting legislation.

Specifically, with Resolution 120, the sustainable and climate resilience development plan for the Mekong Delta issued by the Prime Minister in 2017, the Government looks to identify, establish and implement a new institutional and legal/policy framework to improve climate-resilient planning, setting infrastructure investment priorities and coordination across provinces.

Alas, the future is not bleak and hopeless. Instead, every challenge presents an opportunity.

And work will obviously not stop here. On the contrary, we are aiming at renewing and intensifying our dialogue for a sustainable and climate-resilient future for the Mekong Delta, recognising that it is strong partnerships between stakeholders, firm commitments and political will as well as sound donor coordination that will forge a sustainable future for the Mekong Delta.

As part of this, donors, implementing agencies and non-governmental organisations (NGOs) have come together in the Mekong Delta Working Group (MDWG) to develop joint strategies and programmes with the Government of Viet Nam to harmonise financing and develop approaches and activities for the Mekong Delta and its people.

Recognising that the Integrated Coastal Management Programme (ICMP) has been following an approach which brings together stakeholders in an integrated manner, mainstreaming technological innovation and harmonising subsequent institutionalisation efforts, we are pleased to endorse this report, which highlights some of the successes and key impacts of ICMP. We can all benefit from the lessons learnt for our future programming in the Mekong Delta.



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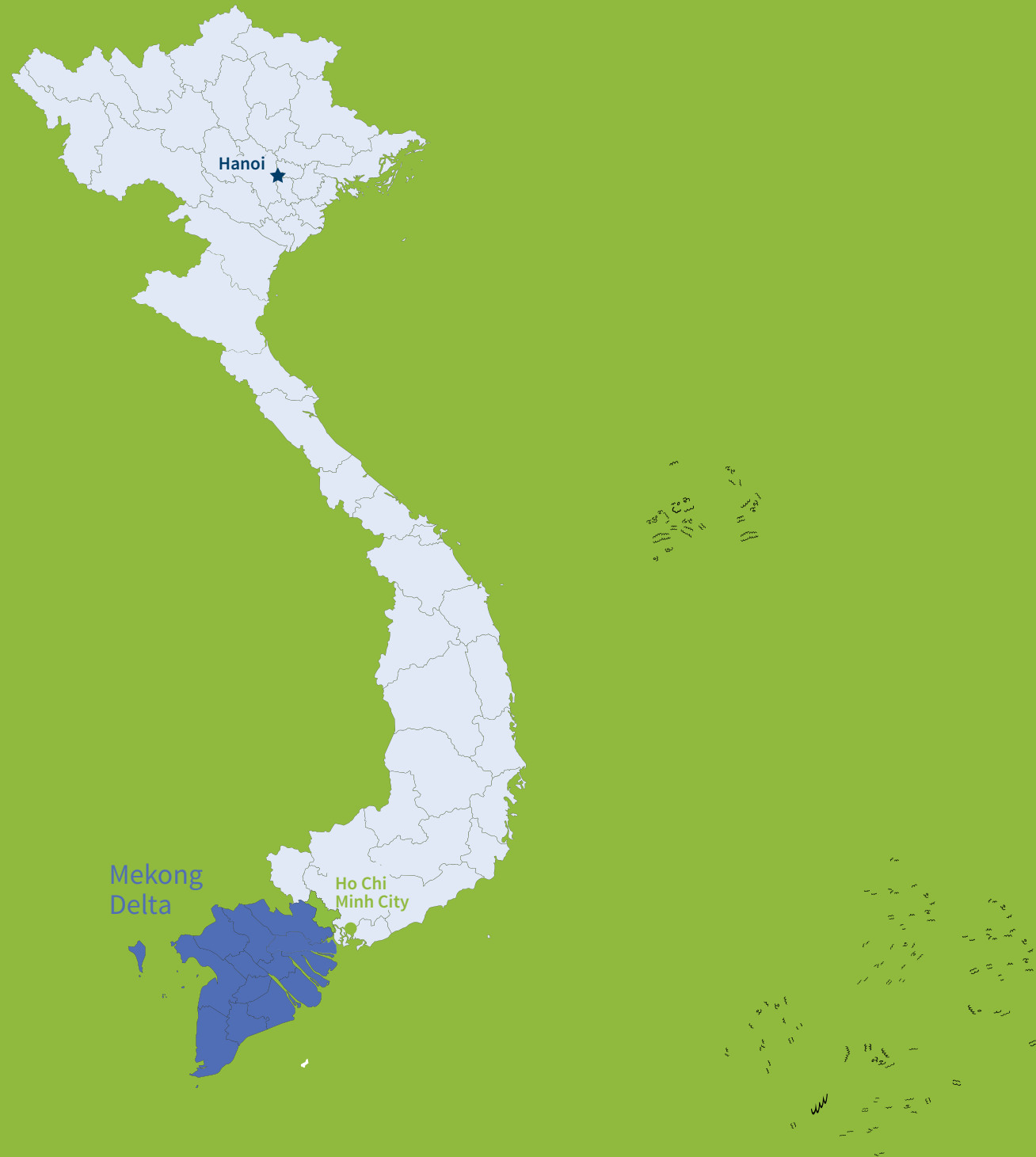
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## The dynamism of the Mekong Delta

Viet Nam is a dynamic country undergoing rapid transformation. Following the country's strong overall economic performance and growth that has lifted millions of people out of poverty and continues to do so, the Mekong Delta is a booming region equipped with an excellent investment climate.

Due to substantial investment in transport infrastructure, access to the Mekong Delta has improved significantly. Travel time between Ho Chi Minh City and Can Tho has been cut from more than six hours in 2010 to less than three hours in 2015. Communications and energy infrastructure are improving at similar rates.

The Mekong Delta is Viet Nam's most important agricultural region – an economic powerhouse trailing only behind the metropolitan areas of Ho Chi Minh City and Hanoi, and is thus the third largest industrial region.

Producing 55% of the country's rice, it is the reason that Viet Nam, which once suffered rice shortages, is now the world's second largest rice exporter providing a source of food for roughly 245 million people worldwide. The Mekong Delta is home to a thriving agriculture and aquaculture industry due to its highly fertile land and good access to water for irrigation. Modernisation of the industry and advancing agro-processing are providing ample opportunities for domestic and foreign direct investment. The aquaculture industry has risen 500% in value in the past ten years. Both industries are now beginning to move from quantity to quality.

These examples highlight one thing: this is a region full of opportunities.

Geographically located at the southernmost tip of Viet Nam, the Mekong Delta is dominated by flat floodplains. It is crosscut by the Mekong river which flows to the sea via a network of tributaries with nine main branches, earning it the Vietnamese name Nine Dragon River Delta. Thousands of kilometres of river arms and canals further divide the land.

Administratively, the Mekong Delta is divided into 13 provinces, the city of Can Tho is regarded as its centre. With more than 17 million people – about one fifth of the total population of Viet Nam – the region, like many deltas around the world, is densely populated.

Despite the many opportunities and the progress that has been made, there are certain risks associated with climatic and environmental changes that cannot be ignored.

The Mekong Delta ranks amongst the top five deltas in the world most likely to be severely affected in terms of climate and other environmental changes. These changes will bring a range of associated impacts on the people, their health, and their livelihoods and prosperity.

After 7,500 years of natural fast increasing land accretion (current size: 41,000 km<sup>2</sup>) and steady propagation to the southeast, this trend has been reversed in the years 2005 to 2018. Climate change is leading to rising sea levels, and according to studies, 38% of the Mekong Delta could be underwater by the year 2100. More than 50% of the 720-kilometre coastline is eroding – of which more than 10% is eroding at between 20 and 50 metres per year.

The loss of forest land along the coast is particularly sensitive since this green belt was once stabilising the dynamic silty coasts by attenuating wave surge and trapping fine sand and clay. Erosion of the entire tidal mudflats leave deep scours and steep embankments where natural mangrove resettling is impossible. The current sea-dyke system is hardly able to cope with storm surges and rising waters once exposed to the sea without dyke foreland and mangroves. The sea-dyke system shows many gaps and was never constructed to deal with the current harsh conditions in exposed areas. Dyke breaches and flooding threatens the densely populated hinterland.



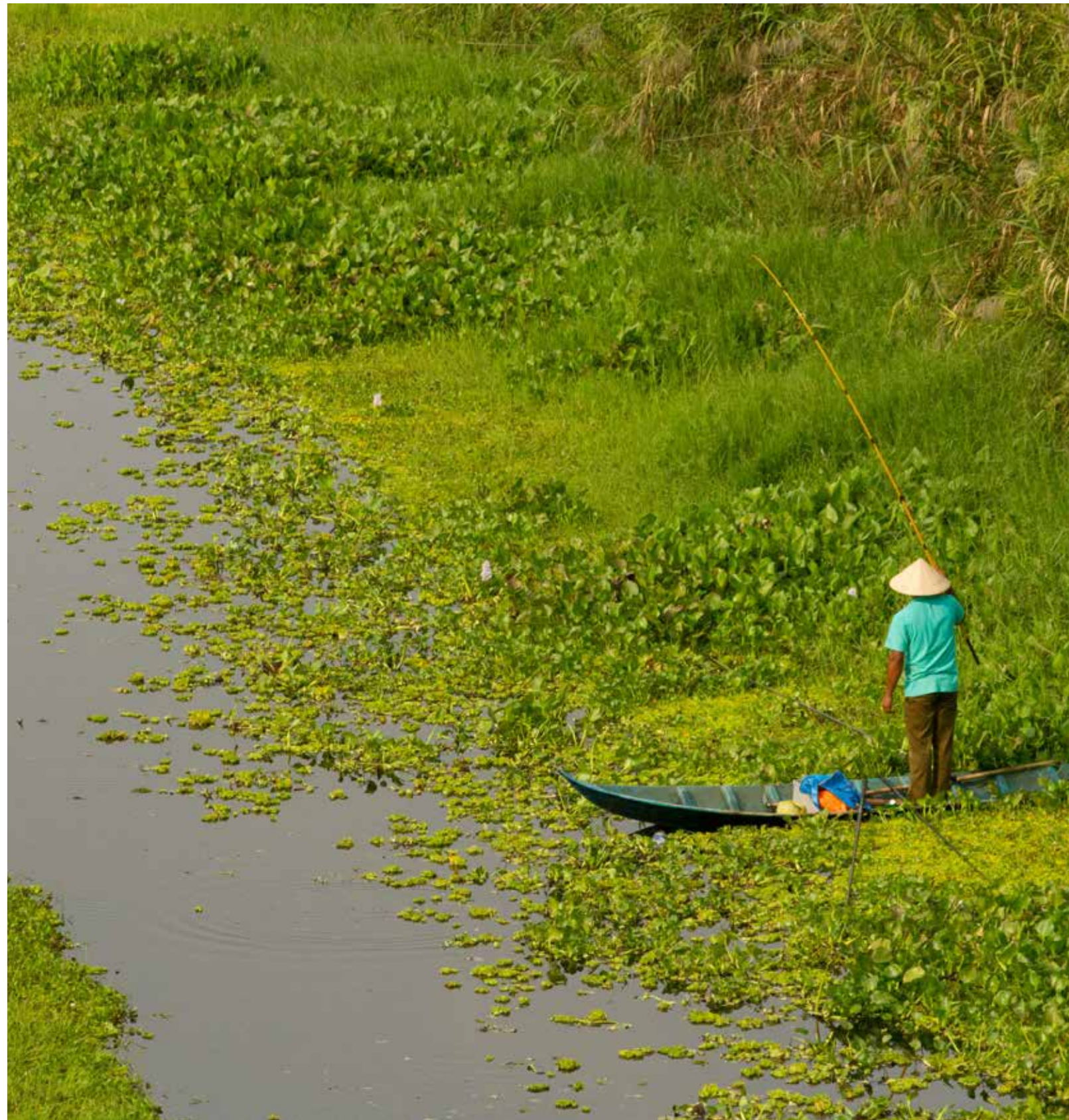
In this context, the continuous degradation of ecosystems is only one problem. Another grave threat is the likelihood of an extreme weather event, especially major storm floods and droughts. In case of such a storm flood, large amounts of water could flow over the dykes at different places and form one large water expanse reaching 20-30 kilometres inland, with no way to drain off. Such an event would add significantly to the salinization of the soil, subjecting large areas of the coastal delta to a brackish environment and destroying vast parts of agricultural harvests, putting the livelihoods of tens of thousands of farmers at risk. Peak flows and river floods are set to increase in the wet season. Decreases in dry season flows lead to serious fresh water shortages.

Apart from climate change, socio-economic development to a large extent determines the ever-increasing pressure on land and water resources even more. In a region where one rice field and shrimp pond borders the next, the loss of land to the sea by erosion means that economic and social pressures multiply. Viet Nam, having transitioned to a lower middle-income country, needs to sustain its growth rates and ensure economic momentum.

Developing an appropriate strategy to mitigate and adapt to these changes has become crucial. Improper agricultural practices – amongst others the incorrect use of chemicals – are leading to an imbalance of the coastal ecosystem. Transboundary developments such as the construction of hydropower dams upstream may further aggravate the stresses on land and water resources.

The present and future challenges described above highlight the fact that the entire Mekong Delta is threatened and its protection is of the utmost, and in many regards existential, importance.

The Government of Viet Nam has recognised that appropriate ecologically friendly and all-encompassing planning of coastal areas is an essential factor to preserve and trigger the development of the entire Mekong Delta. The breaking-up of silos between all



disciplines has only just begun to influence planning and regional coordination.

The Government of Viet Nam is actively mobilising domestic, international, public and private financial resources and know-how in its aim of establishing a climate-resilient future. Over the next decades billions of euros are necessary to make the Mekong Delta resilient to climate change. To make these investments effective and to achieve the necessary impact, government entities at central and provincial levels are adjusting their technical approaches, regulatory frameworks and institutional settings, recognising that only a climate-resilient Mekong Delta can be a prosperous Mekong Delta.







Full name	
Integrated Coastal and Mangrove Forest Protection in the Mekong Provinces for Adaptation to Climate Change (ICMP) Renamed as the Integrated Coastal Management Programme (ICMP) in 2015	
Project term	Project volume
2011-2018	EUR 23,570,000
Objective and geographical scope	
Government authorities at national and provincial levels (Ministry of Agriculture and Rural Development, MARD; Provincial People's Committees, PPCs; Departments of Agriculture and Rural Development, DARDs) utilise enhanced political, planning and financial capacities to foster climate-resilient development for the Mekong Delta's coastal ecosystems. National level and Soc Trang, Bac Lieu, Ca Mau, Kien Giang, An Giang Provinces	
Donors	
Australian Department of Foreign Affairs and Trade (DFAT)	German Federal Ministry for Economic Cooperation and Development (BMZ)
Lead executing agency	Implementing agency
Ministry of Agriculture and Rural Development of Viet Nam (MARD)	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Target groups	
The indirect target group is the population of the Mekong Delta (17 million people); the direct target group is the 3.5 million people living along the coastline of the five provinces served by the project as well as 10,000 farmers benefitting from improvements in agriculture and aquaculture.	

## Programme partners and donors



Australian Department of Foreign Affairs and Trade (DFAT)	German Federal Ministry for Economic Cooperation and Development (BMZ)
<p>Australia's commitment to development cooperation with Viet Nam is ongoing. Reflecting a maturing economic partnership, the Australian Government's aid program leverages Viet Nam's significant domestic resources and foreign investment, and supports Viet Nam's efforts to enter a new phase of economic development.</p> <p>Australia's aid program in Viet Nam is delivered by the Department of Foreign Affairs and Trade (DFAT), working with other bilateral donors, Government of Viet Nam ministries, multilateral development banks, the United Nations, Australian and international companies, and non-government organisations. By helping to stimulate the private sector, upskilling the workforce, and supporting inclusive growth, Australia is contributing to a shared goal of promoting prosperity and reducing poverty in Viet Nam.</p>	<p>BMZ develops the guidelines and concepts on which German development policy is based.</p> <p>These are the foundations for developing shared projects with partner countries and international development organisations.</p> <p>Since 1990, Germany has provided more than EUR 1.8 billion for Viet Nam, mostly in the form of loans for joint programmes. The core areas of the bilateral cooperation with Viet Nam are environment and natural resources (coastal management and biodiversity), energy, and vocational training.</p>
Ministry of Agriculture and Rural Development of Viet Nam (MARD)	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
<p>MARD is responsible for performing nationwide state management functions in the fields of agriculture, forestry, salt industry, water resources and rural development. MARD was the executing agency of ICMP. MARD (as line ministry) and its corresponding provincial line departments (such as the Department of Agriculture and Rural Development, DARD) were the most important implementation partners. Within MARD, ICMP was institutionally anchored to the Management Board for Forestry Projects (MBFP).</p>	<p>GIZ is a German federal enterprise providing international cooperation services for sustainable development and international education work. It operates in about 130 countries worldwide on behalf of the Government of Germany, other donors and selected clients from the private sector.</p> <p>GIZ jointly implemented ICMP alongside MARD. Having worked in Viet Nam for more than 20 years, GIZ currently has around 240 specialist staff deployed across the country, including national and international personnel, development workers and international experts.</p>



## Programme description

In accordance with the institutional, legal and strategic framework laid out by the Government at the national level and in five provinces in the Mekong Delta (namely Soc Trang, Bac Lieu, Ca Mau, Kien Giang and An Giang Provinces), a specific development objective was to strengthen the coast of the Mekong Delta by making it more resilient against climate change and environmental hazards.

Jointly launched by the Governments of Australia, Germany and Viet Nam in 2011, the development cooperation programme, “Integrated Coastal and Mangrove Forest Protection in the Mekong Provinces for Adaptation to Climate Change” was re-named as the “Integrated Coastal Management Programme” (ICMP) in 2015. This report covers the key achievements and impacts of ICMP during 2011-2018.

MARD was the lead executing agency and the most important implementation partner, together with administrative bodies at the provincial level, such as the PPCs, the DARDs and other provincial departments. The PPCs play a decisive role in the implementation and distribution of guidelines and ordinances on the implementation of sustainable and climate-resilient practices.

The Central Economic Commission (CEC) of the Communist Party of Viet Nam and the Office of the Government (OOG) were key partners working on regional coordination in the Mekong Delta.

ICMP cooperated with other ministries, including the Ministry of Natural Resources and Environment (MONRE), the Ministry of Planning and Investment (MPI), the Ministry of Finance (MOF), and the Ministry of Education and Training (MOET). These ministries and provincial authorities played a key role in the creation of relevant policies, development plans and guidelines, as well as the implementation of on-the-ground activities.

The Viet Nam Chamber of Commerce and Industry (VCCI) and the Viet Nam Cooperative Alliance (VCA) were important partners when working with the

private sector. The commune Women’s Unions organized work with village communities and agricultural production groups.

ICMP worked together with multiple institutions affiliated with MARD:

- A 20-member steering committee chaired by a MARD Vice Minister handled overall programme management.
- Institutionally, ICMP was anchored to the Management Board for Forestry Projects (MBFP).
- VNFOREST was a partner at the national level. VNFOREST is responsible for the monitoring and supervision of national policies with regards to forestry management, including co-management and coastal forest protection and management.
- The Directorate of Water Resources (DWR) was a partner at the national level. The DWR is responsible for the development, monitoring and supervision of national policies within the areas of water for agriculture and rural development, irrigation management systems, and dyke planning.
- The Viet Nam Disaster Management Authority (VNDMA) was a partner at the national level. The VNDMA is responsible for all issues related to disaster risk reduction and management.

### Key highlights of the first phase

The focus of the first phase (2011-2014) was to explore new technologies and innovations by setting up pilot and demonstration sites and conducting trials. This included the protection of the Mekong Delta as an economic region which ensures the livelihoods of its people. The core areas of ICMP then were land and water management, coastal protection and coastal governance, sustainable livelihoods and environmental awareness. In these areas, ICMP achieved impacts in making the coast more resilient against environmental change.



### Land and water management

- The guidelines on participative irrigation management targeted 11,000 water use groups and associations and benefitted more than 300,000 hectares of agriculture and aquaculture area.
- Introduction of the co-management model for natural resource management to Soc Trang Province.
- Introduction of the Integrated Water Resources Management (IWRM) approach to the Long Xuyen Quadrangle in the Mekong Delta.

### Coastal protection and coastal governance

- Policy package on forest management benefitted 8.7 million people on 3,200 km of coastline in Viet Nam.
- Introduction of the T-shaped breakwater fences (T-fences) to rehabilitate mudflats and mangrove forests.
- 10 hectares of land reclaimed from the sea and 603 hectares of mangrove forest rehabilitated.
- 40,000 people safer from extreme weather events.

### Sustainable livelihoods

- 22 livelihood models for 8,500 households that reduced environmental pressure and increased incomes by 20-80% per household.
- Introduction of rice crop production techniques that require 30% less water and pesticides and generate increases of up to 40% in income.
- Introduction of mangrove aquaculture techniques limiting the use of pesticides and increasing incomes by 27%.

### Environmental awareness

- More than 25,000 teachers reached.
- Environmental issues included in official school lesson plans and endorsed by MOET.
- 93% of polled primary school students in Kien Giang Province stated that they changed their behaviour towards the environment.

Due to these measures, ICMP improved living conditions – particularly for disadvantaged people and local communities including ethnic minorities, who feel the negative impacts of a changing environment the most. Especially the activities focusing on co-management livelihoods targeting poor populations have both improved resilience against environmental change and increased incomes.



## Key highlights of the second phase

With its second phase (2014-2018), ICMP built on previous achievements. Following the development of technologies and innovative solutions for some of the most pressing problems of the Mekong Delta, these solutions have been scaled-up to realise their full impact on a broader scale. This included translating innovations into policies and regulations, establishing new partnerships that helped to create synergies, and strengthening the technical and financial capacities of authorities to implement the changes necessary to make the Mekong Delta more resilient against environmental change, to sustain livelihoods and to promote sustainable growth.

There were two major changes from phase I to phase II of ICMP:

### From geographical to impact-driven orientation

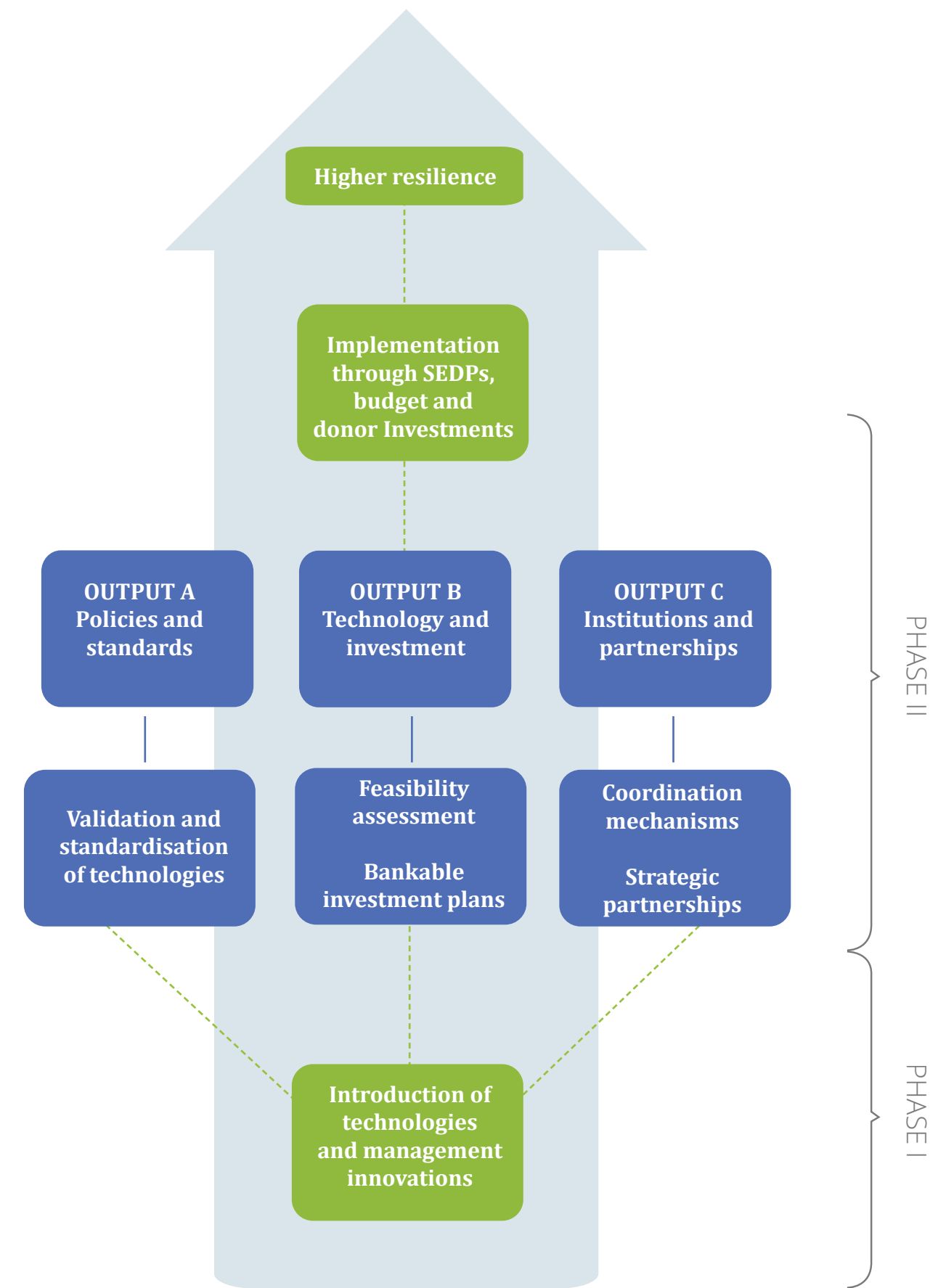
While in the first phase, ICMP was organised according to the provinces (and the national level) where the programme activities took place, ICMP was restructured according to impacts and technical areas in the second phase, ensuring that solutions in one technical field (such as agriculture or forestry) could be applied in all appropriate provinces.

### From development of technologies to institutionalization and scaling up

In phase I, ICMP focused on the development of technologies to cope with a changing climate and environment in the Mekong Delta. While these solutions have been piloted successfully in several locations, for phase II a stronger focus had been necessary on institutionalising and scaling-up these technologies to facilitate systemic (and not just selected) changes towards climate-resilient development of the Mekong Delta.

The **institutionalisation and scaling-up** of the successes of phase I was at the core of phase II (see graph): To achieve **higher resilience, innovations** (phase I) need to be successfully **translated into policies which become binding** (Output A). On the other hand, the **implementation of innovations** through policies needs sound **institutional support** not only to create appropriate procedures but also to **foster and establish partnerships which help to create synergies** (Output C). Finally, both forms of institutionalisation can only be capitalised on if **technical, managerial and financial capacities are further enhanced** (Output B). An underlying movement **from innovation to transformation** and ultimately higher resilience tied ICMP together.

In phase II, ICMP did shift its focus from developing and adapting technologies to further institutionalising these solutions; for instance by introducing policies, guidelines and technical standards, promoting cross-provincial and regional cooperation and coordination, strengthening strategic partnerships and the preparation of new investments by drafting feasibility studies and investment plans. This led to the scaling-up of the technologies and solutions developed in phase I.





# Major IMPACTS of ICMP



More than **7 million people** in the Mekong Delta are better protected against the effects of climate change.



**720 km of the Mekong Delta's coastline** is under better protection against extreme weather events such as storms and floods. This is expected to make more than **3.5 million people** in coastal districts safer against the impacts of climate change.



The development of a **pilot regulation on regional coordination** in the Mekong Delta approved by the Prime Minister (Prime Minister's Decision 593) is expected to increase the effectiveness and efficiency of climate policies and investment in **13 Mekong Delta provinces**, thereby benefitting more than **17 million people** living in the Mekong Delta.



The introduction of T-shaped breakwater fences to Viet Nam which in some sites **stop erosion rates of up to 30 metres per year** and in other sites have restored up to **180 metres of land that had been lost to the sea**. This new land consists of mudflats where mangroves and other plants can grow.



The introduction of the use of lightweight drones is expected to help **monitor 590 km of coastline and about 53,000 hectares of mangrove forest** in the four coastal provinces of Kien Giang, Soc Trang, Ca Mau and Bac Lieu Provinces. Additionally, the technology feeds into a comprehensive decision support tool, the "**Coastal Protection Plan for the Mekong Delta (CPP)**", also featured in this report.



The implementation of **84 livelihood models** (under the agriculture, aquaculture and forestry working areas) benefits around **57,000 people**. The livelihood models, such as climate-smart rice production or mangrove-shrimp farming, reduced the environmental pressure and increased incomes by **20-80% per household**.



Support to enhance water management in two key sub-regions of the Mekong Delta (Quan Lo - Phung Hiep and Long Xuyen Quadrangle), involving all five ICMP provinces, where operational legislation has been developed and institutionalized. This substantially improves the management of different types of water in **14,266 kilometres of canals** in the Mekong Delta, which benefits around **3.5 million people** and positively impacts **680,000 hectares of agriculture and aquaculture land**.

The development of a coastal forest policy includes the planting of **46,000 hectares of new coastal forest by 2020** which will provide ecosystem services worth approximately **USD 102 million annually**, as well as carbon sequestration of around **13.2 million tons of CO<sub>2</sub> equivalent**.









# AGRICULTURE

Supporting the development of climate-resilient farming practices

-  With the rapid changes of the environment, an appropriate response and adaptation of farming techniques is urgently needed.
-  An efficient utilisation of resources needs to go hand in hand with a halt to harmful practices.



# AGRICULTURE

The introduction of innovative climate-smart and environmentally friendly agricultural practices to farmers, such as the use of well adapted and high-quality varieties, improved cultivation practices, and irrigation services were a focus of ICMPs work.

## Support to




### Farmers

-  Introducing climate-smart farming practices
-  Creating market linkages



### Authorities

-  Designing smart policies
-  Strengthening decision-making through capacity building

## Key Impacts

ICMP has developed:



**80** livelihood models



providing support to approximately **52,000** beneficiaries



with reported increases in income of **20-80%**.

Directly contributing to

6 SDGs










## There is a need to feed more people using less land, water and energy

Since reforms with an emphasis on a market-oriented economy were initiated in 1986, Viet Nam's agricultural sector has made enormous progress. From widespread hunger and famine, Viet Nam has become a leading exporter of a wide range of agricultural commodities, including shrimp, rice, coffee, pepper and cashews. The sector continues to play a very important role for the populations' employment and livelihoods, currently accounting for more than 40%, and much higher in the Mekong Delta.

Emphasis has been on quantity, producing more with increasing inputs. This has come at the expense of the environment. Extensive use of fertilisers, pesticides and other agrochemicals have resulted in growing incidents of land degradation and water pollution. This has increased concerns about food safety, which is now high on the Vietnamese agenda. Viet Nam typically exports raw agricultural commodities of low quality resulting in low prices, and smallholder farmers are struggling to make a living. Against this backdrop, the Government of Viet Nam has shifted the sector's development strategy from quantity to quality (as stated in the Decision No. 899/QĐ-TTg).

Some adverse effects of climate change – temperature and sea level rise, a disruption of rainfall patterns and an intensification of weather extremes – is already impacting the agricultural sector and the livelihoods of Viet Nam's rural population. The effects include coastal erosion and salinity intrusion, severe storms and flooding during the rainy season and droughts during the dry season. Due to increased use and competition for water, ground water levels are rapidly decreasing. This holds especially true for the Mekong Delta, one of the world's largest rice producing areas.

The United Nations predicts that a growing global population will need 35% more food, 40% more water and 50% more energy by 2030. At the same time there is consensus that an expansion of agricultural land is not a viable option anymore. This implies that

there is a need to feed more people using less land, water and energy. Future growth relies primarily on increased efficiency, innovation, diversification and added value. This is particularly challenging in a country of smallholder farmers with an average farm size of less than a hectare.

## Supporting the development of innovative climate-resilient farming systems

ICMP worked in three overarching thematic areas in the sphere of agriculture: (a) supporting farmers to adopt better farming practices; (b) enhancing competitiveness and market linkages; and (c) capacity building for key stakeholders ranging from individual farmer to farmer organisations (cooperatives, production groups) and the local extension system.

ICMP supported the Government in the implementation of its National Green Growth Strategy (NGGS), its Socio-Economic Development Plans (SEDPs) and the Agricultural Restructuring Action Plan adopted in 2014, emphasising the sustainable use of natural resources. ICMP included the ecological, economic and social dimensions, where food and nutrition security, gender and equality are crucial elements. The focus was on livelihoods systems.

Rice is the most widely consumed staple food for a large part of the world's population, especially in Asia. It plays a vital role in Viet Nam's agricultural sector with a vast amount of smallholder farmers depending on it for their livelihoods – particularly in the Mekong Delta. However, it is also a major contributor to greenhouse gas emissions when applying conventional cultivation practices. Therefore, there has been a focus on rice production.

However, ICMP also supported diversification into higher value products. Particularly, in the coastal areas affected by saline intrusion and no longer suitable for rice production, ICMP supported the development of sustainable shrimp-rice cultivation instead of three rice crops per year. In other areas where suitable, ICMP introduced rice crop

rotations, including cash crops. The development of high-value and quality product value chains, such as vegetables is important for improving farmers' employment and income opportunities, and for meeting consumer demand.

## Salt-tolerant rice varieties

One of the consequences of the changing environment in the Mekong Delta is the increasing salinity of the soil and water. Across the Mekong Delta, there are areas where rice does not grow anymore due to the high degree of salt in the soil. With increasing salt water intrusion and aquaculture production, it can be expected that soil salinity will remain a central problem for the Mekong Delta in the future.

ICMP has responded to this challenge by introducing salt-tolerant rice varieties to farmers. These varieties secure high yields even in salty environments.

The establishment of the Mekong Partnership for Climate-Resilient Rice Development Network (MPCRRDN) has been supported, with the specific objective of synchronising the development and dissemination of well adapted salt-tolerant rice varieties.

## Floating rice

Floating rice is a traditional farming practice that has almost disappeared in the Mekong Delta. Prior to 1975, the overwhelming majority of rice production in the Mekong Delta was of floating rice (500,000 hectares). Now, all but one variety of floating rice has been lost, and its production area has been reduced to just 40-60 hectares in An Giang Province.

Floating rice is a rice variety that is adapted to flooding, and therefore more in-tune with the natural flood conditions of the region. The seed is sown in dry soil just before the flooding season, and with rising flood waters the plant grows at very fast rates

(up to 10 centimetres a day) which lets it survive in water as deep as four metres and keeps it above the flood level, hence its name: floating rice.

Floating rice is considered a healthy product since there is little or no need for farm chemicals, the flood waters bring nutrients to the rice fields and control pests. Farmers that grow floating rice can also catch wild fish that come into the field with the flood waters. The fish are an important source of protein for the community. When combined with other crops such as cassava or pumpkin, floating rice proves to generate a highly competitive income for farmers.

From an environmental perspective, floating rice has great value for flood retention and water regulation. The floating rice fields act as a huge sponge retaining water during flooding months and then gradually releasing water downstream.

The provincial Government of An Giang Province recognises the importance of conserving floating rice farming practices. Together with stakeholders from the Netherlands, the International Union for Conservation of Nature (IUCN) and the Vietnamese business community, ICMP initiated an action plan for the conservation and expansion of floating rice into the future.



# SUCCESS

## STORIES

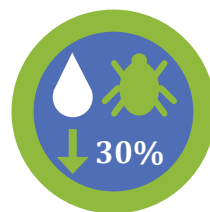
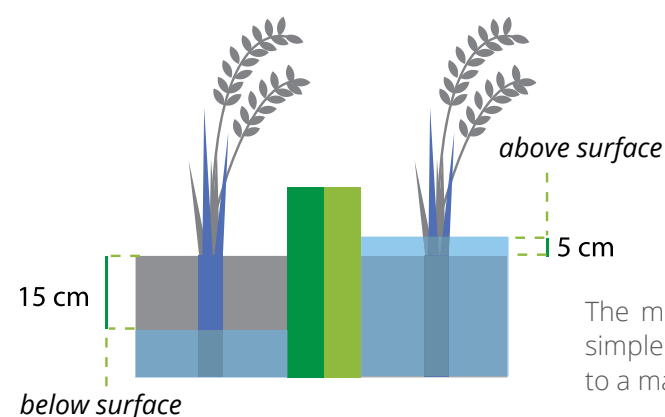
### Alternate Wetting and Drying (AWD) technique of rice cultivation

Water is getting scarce in the lower Mekong Delta due to river flow reduction and groundwater depletion in several parts of the region. As a result, water availability will soon be insufficient to keep rice fields continuously submerged.

Strategies for an appropriate adaptation to climate change such as the Alternate Wetting and Drying (AWD) technique of rice cultivation and the introduction of suitable salt- and flood-tolerant rice varieties, along with other innovative practices, can contribute to a more efficient use of natural resources and higher incomes.

AWD is a scientifically grounded, evidence-based method that has been introduced by the International Rice Research Institute's (IRRI) CLUES project (Climate Change affecting Land Use in the Mekong Delta) which has received funding from the Government of Australia. ICMP has been a major partner of IRRI in disseminating the technology and for ensuring that it is widely used in the Mekong Delta.

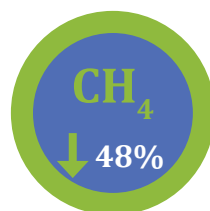
Farmers first flush their fields after sowing with water and then let the fields dry out, until the water stands 15 centimetres below the soil surface. Then, the water level is raised to about 5 centimetres above the surface, and the process is repeated.



AWD reduces water and pesticides consumption for farmers to **30%** with no observed loss of yield.



AWD increases the income of farmers by up to **40%** per rice harvest.



AWD reduces greenhouse gas emissions (GHG), particularly methane (CH<sub>4</sub>), with an average of **48%** compared to continuous flooding.



After pilot implementation, local authorities and farmers have successfully scaled-up the model to **15,000-35,000** hectares depending on the season.



**1,100** farmers have benefitted from this approach by lower pumping costs.

### Enhancing competitiveness and market linkages

#### Public-private partnerships (PPP)

An important modality is the establishment and facilitation of public-private partnerships and market linkages. These partnerships typically consist of domestic and international agribusinesses, farmers and their organisations, MARD and provincial authorities. The objective is to develop sustainable, competitive and inclusive agricultural value chains from farm to fork, where smallholder farmers get their fair share.

#### Better Rice Initiative Asia (BRIA)

In cooperation with Bayer and MARD this included the piloting and development of 22 local PPPs consisting of agricultural cooperatives, agribusinesses, DARDs and local authorities in Dong Thap, Hau Giang and Kien Giang Provinces:

- The development of a training manual in climate-smart rice production, Training of Trainers (ToT) for 121 provincial technical staff, and training of 3,000 farmers (26% women) in climate-smart rice production.
- The Sustainable Rice Platform (SRP) standard was introduced.
- Direct farm level impact: 40% gross margin increase from a combination of reduced input costs, increased yield and quality. The European Union's (EU) quality requirements for Maximum Residue Levels (MRL) were consistently met.
- MARD has been supported in establishing the Rice PPP Task force at the national level, and initiating the Agricultural Cooperative Development Partnership Network, with the objective to serve as policy dialogue platforms.

Building on the success of these initiatives, a new strategic alliance with Olam International has been initiated. Under this initiative, at least 10,000 smallholder farmers will be trained to produce high quality rice in compliance with the SRP standard for the domestic and export markets. The focus is on improving farmers' livelihoods.

#### Sustainability and quality standards

Monitoring of agronomic practices against environmental, social and economic sustainability standards is critical to meet international and domestic consumer expectations for quality, safety, sustainability and traceability. GIZ is assisting in introducing the world's first sustainability standard for rice, which provides the framework for climate-smart best practice, the Sustainable Rice Platform (SRP) standard. ICMP assisted farmers in implementation and certification of the VietGAP and Global GAP standard in shrimp-rice cultivation. The review of the application of the existing quality standards in Viet Nam has provided significant field evidence for policy improvement.

#### Capacity building of farmer organisations



Agricultural cooperatives and farmer groups play an important role for smallholder farmers in achieving economies of scale, access to services (including extension services), inputs and not least access to markets through long-term relations with traders, processors and exporters. When working together, farmers can support each other in adjusting cropping systems to climate change, applying new and innovative technologies, and implementing quality standards. A report on the assessment of the agricultural cooperatives in the Mekong Delta has served as a sound foundation for MARD and DARD to develop an action plan to implement the Prime Minister's Decision No. 445/QĐ-TTg on building new pilot agricultural cooperative models in the Mekong Delta.





# AQUACULTURE

## Supporting a sustainable and competitive aquaculture industry

-  Aquaculture provides immense growth rates but also contributes to environmental problems due to the absence of sound management practices.
-  A lack of competitiveness and insufficient product quality weakens Viet Nam's position in the world market.

# AQUACULTURE

The introduction of new farming practices and environmentally friendly aquaculture models improved product quality and increased the income of farmers. A reform of institutional settings in the aquaculture sector improved market linkages, creating successful PPP models.

## Support to



### Farmers

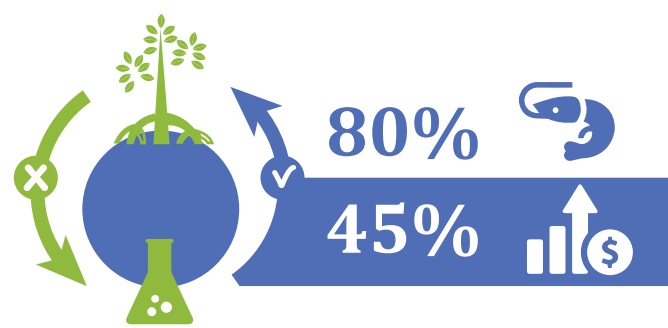
-  Introducing smart aquaculture practices
-  Developing market linkages
-  Creating Farmer Interest Groups (FIGs)



### Authorities

-  Designing smart policies (e.g. revision of the Fisheries Law)
-  Capacity building for decision-makers
-  Creating a discussion platform for fisheries (Aquaculture Round Table)

## Key Impacts



Improved mangrove aquaculture techniques supported by ICMP ensured that households used a reduced amount of chemicals leading to an increased survival rate of shrimps by up to **80%**. As a result, farmers increased incomes by about **45%**.

Directly contributing to  
**5 SDGs**





## High product quality is the key success factor for a sustainable aquaculture industry

With highly fertile land and good access to water for irrigation, the Mekong Delta is a truly productive aquaculture zone – despite the sector's high vulnerability of aquaculture production areas to climate change or extreme weather events. Over the last ten years, Viet Nam's aquaculture and seafood industry has grown by around 500% in value and the Mekong Delta plays a central role in the fast-growing sector. Around 70% of the country's total aquaculture output comes from the Mekong Delta, which has some 750,000 hectares dedicated to this form of production.

But aquaculture production in the region faces challenges: There is an insufficient transfer of available research results into practice, especially regarding farmed breed, disease control, feed, as well as wastewater and environmental management – partly caused by a lack of policies aimed at creating incentives to apply research and to transfer that research to small-scale farmers.

Investments in innovative techniques and modern technology in production and processing are limited and the cooling facilities and processing plants consume large amounts of energy thus contributing to a high level of GHG emissions.

Strict adherence to food safety regulations and certification standards as demanded by export markets is not always guaranteed and insufficient marketing endeavours, both domestically and for international markets, contribute to instable market linkages. In some cases, the rapid expansion of cultivation areas also goes along with the logging of mangrove forest areas.

## Supporting farmers to apply new techniques

One of the key challenges is to improve farming techniques for mangrove aquaculture, a technique in which shrimp farming and other aquaculture practices are allowed within mangrove forests to reach a compromise between preserving trees and enabling economic activity. Furthermore, especially small-scale farmers applying "organic" production

modes need to be linked with the value chain to ensure stable income opportunities and sustain incentives to not switch to intensive shrimp production.

As land for aquaculture is sparse and mangrove forests are set to be protected, Vietnamese authorities in many coastal provinces of the Mekong Delta have introduced a system in which the state offers mangrove forests to farmers to use for aquaculture, so long as 60% – in some areas 70% – of the mangrove trees remain standing (the so-called 60/40 or 70/30 rule).

The result is a growing silvo-aquaculture industry where mangrove trees form part of the ponds in which shrimp are bred. The potential benefits are high: the mangroves filter the water and offer shade, which means that the water warms less quickly so the ponds can be shallower, which saves pumping costs in return. Most importantly, silvo-aquaculture is extensive by nature, with significantly less shrimp per cubic metre. This makes silvo-aquaculture a practice that is much more environmentally sound than conventional shrimp farming.

One problem is that most farmers in the Mekong Delta lack experience with this complex farming environment and act on a trial-and-error basis, with low yields and profits. ICMP, in cooperation with the Research Sub-Institutes for Aquaculture (RIA-2), developed best practices and guidelines that give farmers more orientation – for instance by showing that shrimp, crabs and fish can all be mixed in the same pond if their proportion is adequate, or by giving advice on feeding techniques that do not lessen water quality. Another important factor was the planting of additional fruit trees on the farms thus diversifying the farmers' income.

These techniques have significantly raised the income of 850 farmers, including 215 women. An average increase of USD 250 per farmer has been achieved, while at the same time farmers had to use less chemicals and antibiotics.

The techniques also made aquaculture more resilient against disease: when in 2012 the white-spot disease infected many shrimp ponds in Bac Lieu Province, not a single intensive shrimp farm could make a profit, while every silvo-aquaculture farm remained profitable as their more balanced technique inhibited the rapid spread of the disease. Nowadays, even intensive shrimp farms use mangrove aquaculture techniques on part of their area – as an insurance in case their mass production fails due to disease.

## Organic shrimp production, value chain integration and marketing in Ca Mau Province

Small-scale farmers in the southern districts of Ca Mau Province predominantly produced black tiger shrimps under the canopy of the mangroves without additional feed, pesticides or antibiotics. Approaches to certify farmers as "organic" had not yet led to higher demand and higher incomes. Therefore, ICMP supported the analysis of the value chain and further supported certification processes. The aim was better marketing of the province and its products with international wholesalers and retailers to sustain this environmentally friendly production mode, resulting in a better world market integration of shrimp farmers in the Mekong Delta.

## Policy reform: Revising the Fisheries Law

According to the Master Plan on Agriculture Production Development to 2020, with a vision to 2030, the planned land area for aquaculture is 1.2 million hectares, of which non-utilized coastal land for farming aquaculture accounts for approximately 7,000 hectares and conversion of areas of lowland rice cultivation accounts for up to 90,000 hectares.

Adopted in 2003, Viet Nam's Fisheries Law needed revision as, following the country's move into the globalised marketplace, it was incapable of driving the aquaculture sector further.





In this context, ICMP supported the Government in developing the aquaculture strategy and investment plan for the Mekong Delta and promoting aquaculture production systems in mangrove areas and along the Mekong Delta coast.

ICMP initiated the Aquaculture Roundtable Dialogue (ARD) platform. It has supported the Government's PPP mechanism since 2014 by enhancing the effective participation and involvement of the private sector in policy formulation and decision-making. The ARD meets on an annual basis.

### **Developing market linkages and focusing on product quality**

ICMP collaborated with local authorities to deliver training courses for farmers and small and medium-sized enterprises (SMEs). ICMP also cooperated closely with aquaculture processing and trading companies (e.g. Minh Phu, Minh Cuong, Duong Hung and Quoc Viet) and piloted value chain and market linkage models designed to enable them to access world markets. These pilots included set up and support models like the mangrove shrimp model in Ca Mau Province and the blood cockle model in Kien Giang Province.

Increased awareness among producers and consumers on food safety and increasing competition in the seafood business is driving the demand for farmed product certification. ICMP worked with the private sector to promote aquaculture certification and support small-scale farmer groups towards building up sustainable supply chains. ICMP assisted farmers and SMEs in the implementation and certification of the VietGAP and Aquaculture Stewardship Council (ASC) standards in shrimp production.

### **Strengthening cooperation between farmer groups**

Farmer cooperatives play an important role for smallholder farmers in achieving new economies of scale, access to extension services, connection to traders, processors or exporters and obtaining additional micro-credit loans. When working together, farmers can exchange knowledge, transfer new innovative technologies, and share information, which is why ICMP supported the promotion of Farmer Interest Groups (FIGs) for aquaculture production in the Mekong Delta. The model further aims at strengthening cooperation between farmer groups.



# SUCCESS

## STORIES

### The mangrove aquaculture technique: An environmentally friendly approach in the Mekong Delta

Understanding the importance of mangrove aquaculture and the need to apply farming techniques for a changing environment, ICMP in cooperation with the Research Institute for Aquaculture (RIA) and the Bac Lieu Province Aquaculture Sub-Department developed best practices and guidelines that give farmers more guidance. To spread the knowledge effectively, FIGs were established.

#### Voices from the field

"Due to temperature fluctuation and extreme weather events, our harvest has been destroyed. We tried to change the farming technique but it brought nothing. Product quantity was up and down. Although we used more shrimp seedlings, we still harvested less".

– Mr. Dao Van Ua, a shrimp farmer in Vinh Hau A commune, Bac Lieu Province



"Training changed my life, I learned about how to forecast the cost and revenue, how to manage bookkeeping and how to produce better shrimp quality so that I can sell on the market and get more income".

– Mrs. Kim Ly, a shrimp farmer in Vinh Hau A commune, Bac Lieu Province

"The farming methods and techniques gained at the trainings are very useful. Since applying, we have achieved very good results. For instance, the survival rate of shrimp increased up to 80%, compared with only 40% of the previous harvest."

– Mr. Dao Van Ua, leader of Doan Ket FIG



### How to bring environmentally friendly shrimp to the market?

ICMP supported the analysis of the value chain and further certification processes. The aim is better marketing of the FIGs and their products with national and international wholesalers and retailers. New training courses, including marketing and management have been developed and introduced to the farmers through the FIGs.

Together with the FIGs, a micro-credit scheme for farmers has been set up in the commune. The scheme offers credit of around VND 10 million (ca. EUR 400). It enables farmers to finance their shrimp farming. As a result, increasing quantities of aquaculture products from the commune reached the market and were sold at a higher price.



"If you want to sell your shrimp on the market, you have to know that quality is the key. Although it was hard to change our minds at the beginning, we did it. Besides, we understand the importance of the mangrove forests now. It really protects our lives and secures our livelihoods."

– Mr. Dao Van Ua, a shrimp farmer in Vinh Hau A commune, Bac Lieu Province







# FORESTRY

Supporting the sustainable utilisation and management of natural resources



An eroding coast requires a revitalisation of its depleting but shock-absorbing forest resources that provide a wide suite of ecosystem-services.



Managing forest resources together with communities is of the utmost importance.

## FORESTRY



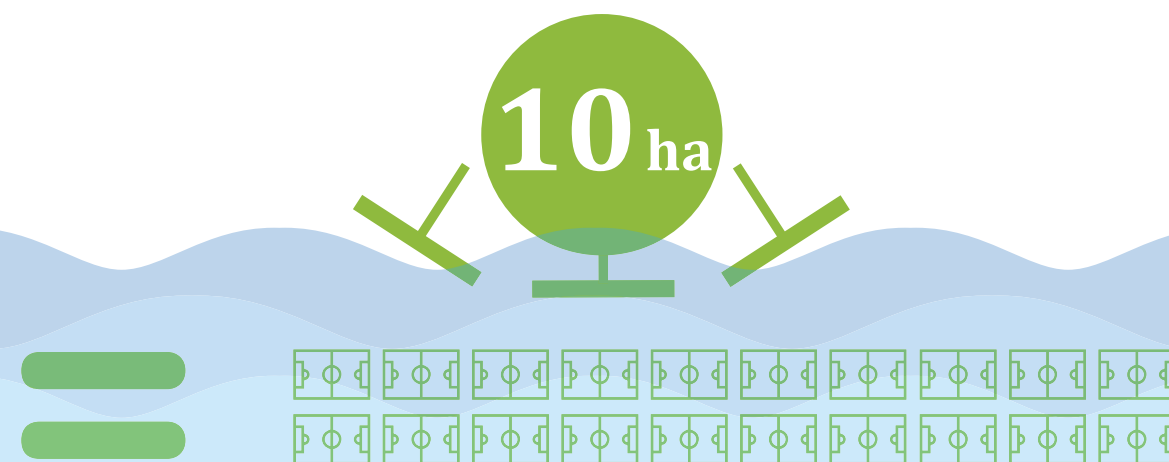
Mangrove forests play a vital role in the Mekong Delta and coastal areas worldwide. They act as a natural shield protecting vulnerable coastal areas and exposed people, critical infrastructure and trade from extreme weather events, rising sea levels and the risks of flooding and erosion.



ICMP has supported MARD and VNFOREST to formulate a range of decisions, guidelines and actions concerning strategic forest resource management and policy. This is not only relevant to the Mekong Delta but all 28 coastal provinces of Viet Nam.

### Key Impacts

The introduction of breakwater fences (T-fences) stopped erosion and rehabilitated mangroves – at one site **180 metres** of land was regained from the sea in two years. In total, ICMP has been able to reclaim land from the sea on an area of **10 hectares**, which is equal to **20 football pitches**.



A continuous capacity building process enabled **950 hectares** of forest resources to be co-managed by the resource users and an additional **698 hectares** of diversified forests were rehabilitated across four provinces.

Directly contributing to  
**8 SDGs**





## A healthy forest for a healthy coast

When sailors shipped along the coast of the Mekong Delta 100 years ago, they could see almost nothing but trees. A belt of mangrove forests, 800 to 1,200 metres thick, stood between the sea and the land and acted as a natural buffer against floods and storms.

Today, the mangrove belt between water and land is shrinking from two sides. From the land side, farmers want to claim the valuable forest grounds for rice fields and shrimp ponds, and local inhabitants or landless people cut the wood and sell it for income or use it for firewood. Further stress comes from irrigation canals that let water flow in two directions: from the Mekong River into the rice paddies and the sea, and from the sea into the shrimp and fish ponds on land. Where the canals discharge into the sea, erosion often occurs.

Such erosion – the loss of land to the sea – is the main threat for mangroves from the sea, and a huge challenge for the population of the coast: erosion of up to 50 metres per year in some areas means that without intervention, houses that lie 500 metres from the sea today would be at the coastline in 10 years.

One such intervention is dykes. The artificially constructed dams prevent sea water from flowing inland in case of floods. Theoretically, dykes would be sufficient to protect the hinterland from floods if it was not for their weaknesses: dykes not only disturb the natural coastal ecosystem, they are also very expensive and complicated to build and maintain.

The consequence is that a combination of well-designed dykes, protected mangrove forests, and innovative techniques to stop erosion is the most appropriate solution for protecting the land from the sea in areas like the Mekong Delta. This is how it works: breakwater fences reduce the wave power, enable sedimentation and restore the lost floodplains so that mangroves can grow. The mangrove trees are the first line of defence for floods and storms by effectively reducing the wave-surge energy; the dykes



act as a last barrier that only considerable floods can surpass.

This cost-benefit advantage of mangroves in relation to dykes is quantifiable. In Northern Viet Nam – where the coastal zone is different from the Mekong Delta but may still serve as a reference – mangroves have been rehabilitated in front of the dyke, thus lessening the pressure on the dyke and reducing costs for dyke maintenance. A scientific, quantitative cost-benefit analysis which reviewed ICMPs activities in Soc Trang Province found that the ecosystem-based approach to coastal management is five times cheaper than upgrading and maintaining a dyke without additional ecosystem-based approaches.

Besides their benefits for coastal protection, mangroves also significantly contribute to biodiversity and the economy – 70-80% of all fish caught offshore spend part of their life cycle in mangroves. Accordingly, each hectare of mangrove that is cut down is equal to the loss of more than a ton of fishing catch in the coastal area, roughly equivalent to USD 37,500.

### Breakwater fences: stopping erosion and rehabilitating mangroves

The introduction of breakwater fences (sometimes also called T-fences due to their often T-shaped structure) is another suitable measure in building a healthier forest and a stronger coast. While comparable structures have been used in Europe for more than 400 years, ICMP introduced the use of breakwater fences in Viet Nam. Subsequently, the model has been replicated both nationally and internationally and has received considerable attention from practitioners, academia and the media. Its key for success is the combination of complex hydrological modelling and simple bamboo fences, resulting in a reversal of erosion and the rehabilitation of mangroves.

The fact that the sea is swallowing ever more land in the Mekong Delta is due to several factors. Firstly, rising sea levels lead to stronger waves which cause

erosion. Secondly, past mangrove rehabilitation attempts have used inappropriate species which cannot protect the land from erosion; for instance, the often-planted mangrove species *Rhizophora* is not suitable at the seaward edge and therefore is not the best choice to prevent erosion. A third potential cause is the change of sediment discharge from the Mekong River.

The breakwater fences are usually T-shaped bamboo fences. Based on complex hydrological studies on tidal currents, bathymetry and wave-height, the breakwater fences are designed and placed at severe erosion sites in front of the dyke. The fences stand in the sea and lessen the force of the waves hitting the coast by wave transformation, i.e. by diffraction, reflection, refraction and deformation of waves.

This wave transformation leads to the settlement of transported sand and mud particles: as the waves lose some of their force, the sand and mud particles they carry settle on the ground and create sedimentation.

On these newly created mudflats, mangroves can naturally grow. Mangrove rehabilitation can also be supported by planting the most suitable (resilient) species at the right locations. Within months or years, depending on the site, the sites are completely transformed, with the land (mudflats or floodplains) reaching much further into the sea, often covered by dense vegetation. ICMP set up and maintained breakwater fences on an overall length of 10.85 kilometres, which includes river protection measures introduced in An Giang Province, the only programme

province which is not on the coast. These fences have been constructed at the most vulnerable sites in the coastal provinces, especially where erosion had already approached the dykes that were unprotected.

The breakwater fences have not only stopped the loss of land to the sea but have reversed this trend by reclaiming land: at one site, 180 metres of land has been regained from the sea in two years. In total, ICMP has been able to reclaim land from the sea on an area of 10 hectares, which equals 20 football pitches.

Technically, this success has been achieved due to a vertical sedimentation of up to 120 centimetres, which means that the soil is 120 centimetres higher than previously and is therefore above water level, except during floods. This higher floodplain has





created a natural protection for the dyke toe and for recruiting mangroves. The inundation periods of near-dyke areas have been considerably reduced, and so is the maximum wave height at the dyke toe.

Behind the protection measures, natural regeneration has occurred, while in some provinces this has been complemented by mangrove planting. Monitoring has shown that natural biodiversity recovered by 70% after four years. In one province, the diversity of species was comparable to a natural forest after 18 months. The breakwater fences have been replicated by other organisations, amongst others by IUCN, which is building such fences in Viet Nam and Indonesia, and the Government of Kien Giang Province at the Vam Ray site.

### **Mangrove rehabilitation: bringing forests back by imitating nature**

While breakwater fences are one major instrument to rehabilitate mangroves, another important field of action was to strengthen areas where mangrove forests have either been cut down or have not developed to their full natural strength. In both cases, ICMP has developed solutions to bring back strong and diverse mangrove forests by imitating nature.

In nature, forests are diverse ecosystems consisting of trees and other plants of different ages, size and variety. This is what makes forests strong: if faced with calamities such as floods, storms or diseases, the variety of forests ensures that while some trees may die, others will survive. In contrast, the mangrove forests planted in Viet Nam are often not diverse, but rather a monoculture. This is due to strict standards and cost-norms that only allow for standardised planting of the same species of trees in long rows. While this approach is useful for planting large numbers of trees for comparatively low costs in a rather short time span, this is not practical for mangrove forests. The resulting forests are often weak, with trees not growing very high and not being resilient to extreme weather.

ICMP has developed approaches to turn such uniform, artificial and weak forests into diverse, strong and natural forests that better protect the coast. One such approach is to imitate the natural rejuvenation process of forests: usually, some very large trees in a forest tend to fall from time to time, creating gaps in the canopy and destroying smaller trees and plants nearby and encouraging the growth of new trees in these gaps.

ICMP has mimicked this natural process by cutting gaps of 80-100 square metres in the monoculture forests and planting other trees and plants in these gaps. The result is a gradual transformation and strengthening of the forest. This approach is even more successful when another natural tendency of forests is followed: trees usually do not grow in uniform distances from one another as in forest plantations, but new trees usually grow close to established trees and trunks. By using this pattern when planting new trees, the resulting forests are more resilient and more diverse.

ICMP has also worked in conjunction with forestry authorities in Viet Nam to change the existing standards and cost-norms for planting mangrove trees to allow for higher spending per hectare, reflecting the need not just for more, but for more diverse forests.

### **Breathe new life into barren land**

While transforming an existing forest is ambitious, the biggest challenge for foresters is to revive barren land where no plants are growing. Such areas are abundant in provinces with a strong aquaculture industry: if aquaculture ponds are not managed sustainably, they deplete the soil and are filled up with earth after their use. The soil on such former aquaculture ponds offers very little nutrients to plants, resulting in barren land. Even worse, these barren areas usually lie in the middle of mangrove forests, diminishing their protection capacity.

ICMP has developed a technique to revive such areas by restoring their hydrology. By digging canals into the ground, water can enter the fields, bringing with it sediments. This has reduced the salt concentration in the soil from 60 parts per million to less than 20 parts per million.

On this restored land, ICMP has planted new trees with techniques mimicking nature described above, resulting in a high tree survival rate of 60-70% on a total area of 25 hectares. The Forestry Department of Bac Lieu Province – which had no success in reviving barren land with the previous techniques – adapted the approach and has used its own budget to employ it at appropriate sites.

Similar approaches in Kien Giang Province have resulted in 17 hectares of diverse mangrove plantations on elevated barren land and 7 hectares of mudflats cultivated with pioneer species, filling gaps in 170 hectares of coastal protection forest in the province.

### **Ensuring biodiversity by creating natural gene banks**

Biodiversity is declining rapidly in the Mekong Delta as natural forests give way to farmland and newly planted forests often consist of only one species of tree. ICMP has taken steps to preserve some of the biodiversity in the programme provinces, by, along with other measures, setting up a natural “gene bank”.

One such bank exists in a five-hectare area in Bac Lieu Province which has been developed into an arboretum, a protected site in which 19 different mangrove varieties are growing today, all of which are endemic to Bac Lieu Province but some of which had been extinct in the area. The area is actively managed by the forest rangers and can be used in the future to plant the trees in different locations in the province and beyond to add structure and biodiversity to the forests.

Similar efforts have been undertaken in Kien Giang Province, including the support of a zone of fifty hectares for the conservation of one rare mangrove species (*Lumnitzera littorea*) in Phu Quoc National Park. A major success for higher biodiversity in Kien Giang Province has been the support for the U Minh Thuong National Park. The national park had suffered from a decreasing presence of birds due to water shortages. A new water management system increased the bird population by 33% from 2011 to 2013. Due to programme support, the park has since gained international recognition as an ASEAN Heritage Park, one of a select six in Viet Nam.

### **Melaleuca forests**

Besides mangroves near the coast, ICMP has supported the management of melaleuca forests and peatland, which is especially abundant in Kien Giang Province. Through programme efforts, the PPC of Kien Giang Province has recognised the environmental importance of melaleuca forests to the ecosystem. Several reports and demonstrations, including a report on the melaleuca value chain, were used as the basis to finance and build a melaleuca timber processing plant. Kien Giang Province committed to grow an additional 30,000 hectares of forest to supply the plant.



# SUCCESS

## STORIES

### Co-management of natural resources

At its core and in the simplest of words, the co-management approach in a natural resource context defines who – in a geographically strictly bounded area – can do:



and how much of it?

with the resource base which is then **implemented** and **monitored** – primarily by the resource users themselves.

Such a model of shared decision-making has been piloted in three district sites of Soc Trang Province (Tran De, Vinh Chau and Cu Lao Dung) and Ngoc Hien district in Ca Mau Province. The local communities directly experience the benefits of protecting the forest and gradually develop a strong sense of ownership. The resource users and local authorities jointly negotiated the co-management agreement for state-owned land in this partnership arrangement.

### Key Impacts



**1,203 households** in four sites in Soc Trang and Ca Mau Provinces are empowered with a more prominent role in mangrove management activities.



**950 hectares** of mangrove forests were brought under co-management.

The efforts of ICMP to rehabilitate mangroves – through T-fences and other measures – are not sustainable if the local population does not respect sites where mangrove trees need protection.

Co-management, as a partnership agreement in which the local population gets the right to sustainably use natural resources like forests, fish and shellfish – along with the responsibility to sustainably manage and protect these resources – addresses the problem of the unsustainable use of resources and the destruction of mangrove forests.

It is for people living along the coast who are dependent on the collection of natural resources from mangrove forests for their livelihoods. ICMP has established four co-management sites.

The problem that co-management is tackling is simple to understand but not easy to solve. Local communities use mangrove forests to obtain timber, to fish and to collect clams and other seafood, snakes, rodents and birds as well as honey. This human interference disrupts the natural rejuvenation process of mangrove forests; for instance, when fishing nets carry away mangrove seeds. For successful mangrove rehabilitation, this needs to stop – and mangrove rehabilitation is in the interest of the local communities, because more mangroves mean more fish, seafood and even timber.

This is where the co-management approach comes in. The idea is to allow local communities to use the mangrove forests, which are owned by the state, for their livelihoods. In return, local communities take over a part of the responsibility to protect the forests. Instead of disputes between the forest rangers and the local communities as in the past, co-management establishes a system of shared decision-making between the state and the communities. Along with other measures, local communities respect that at certain times they may not enter certain protection zones.

The results of the approach are significant. The local communities develop a strong sense of ownership

for protecting the forest. Most importantly, they directly experience the benefits of protecting the forest, including higher incomes.

The co-management approach has been widely observed and has been transferred to different sites. Amongst others, the World Bank has included co-management in a project in the Mekong Delta and the Government has issued a guideline on co-management that recommends the use of the technique. Aquatic resource co-management has been included as a new article (Article 10) in the revised Fisheries Law.

### Payment for Ecosystem Services

ICMP supported VNFOREST in revising the Decree No. 99/2010/ND-CP on Payment for Ecosystem Services (PES) as well as in developing a pilot policy on payment for forest environment services in aquaculture.

One of the success factors of co-management is the inclusion of a component for PES. This is necessary because ecosystems have a certain value, but it is not always the people who reap the benefits who are also involved in protecting the environment. To protect and maintain ecosystems and their services, ICMP identified the beneficiaries of ecosystem services, namely clam cooperatives, which need a functioning mangrove forest to be able to farm and collect clams. On the other hand, it is the local population who protects and manages the coastal wetlands. ICMP initiated a benefit-sharing scheme whereby clam cooperatives pay for their benefits from a well-maintained and protected mangrove forest. The money goes to the members of the co-management groups.

But even beyond this direct payment, a sustainable resource benefits the local population as well as the environment. Only if people see it in their interest to protect the forest, will they refrain from harmful practices. This is the reason education and training are of crucial importance to communicate knowledge on greater environmental processes and on why sustainability is in everyone's interest.





# COASTAL PROTECTION

Supporting the mainstreaming of local solutions into a coherent set of national policies



Robust ecosystems offer the most cost-efficient and most environmentally friendly protection against storms and floods.



Identifying financing sources, delivering decision support to policy-makers, contributing to the protection of the fragile coastlines of the Mekong Delta, and inter-provincial cooperation are key to the sustainable development of the Mekong Delta.

# COASTAL PROTECTION

Coastal protection needs space and close collaboration between national and provincial Governments, agencies and knowledge institutions, residents and international donors.



## Key Impacts



ICMP contributed to the protection of **720 kilometres** of coastline of the Mekong Delta against extreme weather events and floods. This is expected to make more than **3.5 million people** in coastal districts safer against impacts of climate change.



ICMP developed feasibility studies which serve as a direct preparation for investments proposed in the order of about **USD 1.4 billion**.



**Cross-provincial and cross-sectoral** cooperation for spatial planning and effective management of the region's coastal areas has been established.

Directly contributing to  
**8 SDGs**





## Coastal protection is a long-term public task because it requires substantial long-term commitment and investment

A stable and restoring coast needs space for natural development. By no means should grey protection structures completely interrupt sediment transport, nor should sea-dykes be installed in front of mangroves. This is especially relevant for the highly dynamic sandy areas in the region at the river mouth system and the distal deposits at the tip of Ca Mau Province. Mangroves are an essential element of the coastal protection system for the Mekong Delta. The steep and sometimes metre-deep cliffs at eroding coasts at the mangrove fringe make any attempt to reforest a failure. Reforestation along 290 kilometres of the Mekong Delta coast is probably only possible with the support of coastal engineering measures in the nearshore and tidal foreshore. In this way, reforestation of at least 8,000 hectares should be possible within the next ten years.

Another recommendation based on ICMPs implementation record is to define the legal basis and clear responsibilities of public bodies (at national, provincial, and communal levels) as well as the organisation of construction, maintenance, repair and inspection of coastal protection structures, incorporating technical challenges of a regular monitoring of the design parameters (including hydrology, sediment transport, climate change impacts and land subsidence).

Regarding regional coordination, regular regional cross-provincial and cross-sectoral exchange platforms are strongly recommended to synchronise coastal protection planning with the rapid socio-economic development in the Mekong Delta

## Cooperation mechanisms among Mekong Delta provinces

A special strength of the working area of coastal protection has been its focus on cross-provincial cooperation – a necessary but lacking ingredient for climate-resilient development of the Mekong Delta.

Coastal governance below the national level has been a special focus of ICMP due to its activities in five provinces in the Mekong Delta. While some of the activities refer to the required interprovincial cooperation, other activities give an insight into what provinces can do to strengthen their coasts.

A cross-provincial coordination mechanism constitutes one of the biggest achievements of ICMP, as lacking cross-provincial cooperation is one of the most notorious barriers to climate-resilient development in the Mekong Delta.

The cooperation mechanism focuses on the integrated coastal management of the five programme provinces. Other coastal provinces in the Mekong Delta may join at a later stage.

Another strength of ICMP was cross-sectoral cooperation. ICMP supported the development of an integrated coastal zone management (ICZM) strategy for Soc Trang Province to 2020, vision 2030, issued by its PPC in 2015. Soc Trang Province, which was selected by the central Government, used the strategy to implement a coherent management of the coastal zone for the first time involving a range of different topics (such as forestry, coastal protection, and water management) as well as several different departments. This approach can be used as a model for other provinces.

## Supporting Vietnamese authorities through capacity building and policy improvement

Training on spatial coastal planning and coastal civil engineering has provided the provincial authorities with the knowledge and skills they need to plan in a multi-sectoral way and to effectively respond to the challenges arising along the Mekong Delta coast. ICMP assisted the development of a new decree on coastal forest management, protection and rehabilitation and advanced the technical guidelines on 11 different mangrove species, which essentially increase the survival of mangrove plantations. In collaboration with the United Nations Environment Programme (UNEP), ICMP has been working with the provinces to incorporate the national action plan into their provincial action plans and has been supporting the development of the legal framework and policy at the national level.

## Supporting decision-making on coastal protection measures

ICMP has developed and implemented a set of decision-support tools for measures to protect mangrove forests and coastal areas. The tools include guidance on sea-dyke design, breakwaters and breakwater fences (T-fences), coastal mapping techniques, shoreline video assessment methods (S-VAMs), mangrove plantation and mangrove forest rehabilitation, and other solutions that can help the provinces to stop erosion and improve how they protect their coasts.

For the first time ever, a comprehensive scientific and evidence-based system has been developed

to provide decision-makers with a diverse set of technical guidelines and solutions that are most suitable for protecting the 720 kilometres of the Mekong Delta coast. This is key to ensuring that investment decisions on coastal protection measures are sound and cost-efficient.

## Informing investment in coastal protection

Based on its experience working in the coastal provinces, ICMP put together a general assessment of the 720 kilometres of coastline in the Mekong Delta. Dividing the coastline into 71 Coastal Protection Segments (CPS), the assessment proposed measures for each section and indicated the urgency for each measure. The cost estimate is based on most recent investments in the different measures and linked to the recommendations on Coastal Protection Segments of the “Coastal Protection Plan for the Mekong Delta (CPP)” online platform (see below). There are investments proposed in the order of about USD 1.4 billion. The largest investments will have to be made in Ca Mau and Kien Giang Provinces (63% of the total). The construction of sea-dykes and sea-sluices accounts for 88% of the total costs while the reforestation of mangroves, including the restoration and protection of tidal mudflats, accounts for only 12%. By proper prioritisation of certain areas, especially on the west coast, the implementation could be realised within ten years.



## An in-depth look at the “Coastal Protection Plan for the Mekong Delta (CPP)”



The CPP can be accessed on:

**[coastal-protection-mekongdelta.com](http://coastal-protection-mekongdelta.com)**

(as at July 2018)

The “Coastal Protection Plan for the Mekong Delta (CPP)” is an internet-based product to provide guidance for the planning of coastal protection measures and for the prioritisation of investments. It is based on existing evidence provided by recent studies and the assessment of Vietnamese experts, international consultants (from Australia, France, Germany, and the Netherlands), as well as the feedback of provincial Government agencies under the mandate of the Viet Nam Disaster Management Authority (VNDMA) under MARD. The CPP was inspired by several study tours to Australia, Germany and the Netherlands – countries with a long history of failure and success in coastal protection planning.

The CPP recommends detailed technical measures for the entire 720 kilometres of coastline along the Mekong Delta. The coastline is – largely based on urgency – classified into 71 Coastal Protection Segments (CPS), 29 Coastal Protection Units (CPU,

based on existing land and water management units) and 7 Coastal Protection Regions (CPR, characterised by physical design parameters).

For each CPS, detailed recommendations are provided concerning sea-dykes, mangrove reforestation, restoration of eroded mudflats and breakwater installation. Existing structures are evaluated and general guidance for structural and functional design is given. In addition, recommendations for management, capacity building and policy are added. The restoration of mangroves is a central element of the protection system. The CPP does not replace any official planning document but is supposed to feed concepts, ideas and solutions into future regional and provincial planning. The coverage ranges from Tien Giang to Kien Giang Province (7 coastal provinces along 720 kilometres of coastline) with special emphasis on the southern provinces. Nevertheless, the scope of the CPP had to be limited, thus highly

relevant topics such as migration, economic livelihood development, disaster management and biodiversity conservation are only briefly mentioned in context without reducing their crucial importance.

The main objectives of the CPP are to harmonise coastal protection planning on the regional level and to foster inter-provincial cooperation regarding the most efficient technical solutions and modern tools for waterworks and mangrove rehabilitation. Although being a sectoral plan for coastal protection, the approach is based on the integration of water management, forest management and land-use planning in the coastal areas. The CPP also offers a bridge between science and local practitioners.

The main users are expected to be planners and implementers at provincial level. However, it is hoped that national and international investors and donors are also beginning to use this knowledge system. It is assumed that users are not scientists or specialists in

## Timeline in the development of the “Coastal Protection Plan for the Mekong Delta (CPP)”

**2011-2014**

First ideas for the cross-sectoral and area-wide planning of coastal protection feeding directly into the CPP were developed.

**2013**

The foundations for the formulation of a comprehensive strategy for the Mekong Delta for strengthening the sea-dyke system were laid based on the Prime Minister's Decision No. 667/QĐ-TTg (2009) and MARD Decision No. 1613/QĐ-BNN-KHCN (2012).

The “Sea-dyke survey report” (GIZ 2013) highlighted the shortcomings and weaknesses of the current system in place.

**2014**

Erosion protection workshops for the entire Mekong Delta are organized in Bac Lieu and Soc Trang Provinces by MARD and supported by GIZ under the chair of a MARD Vice Minister. This subsequently resulted in an annual workshop series (2014-2017). Erosion is recognised as a growing issue in the entire Mekong Delta.

**2015**

Introduction of lightweight drones for surveying coastal areas around the Mekong Delta. The outcomes were documented and updated on a regular basis on the coastal web map – a predecessor of the final online CPP.



coastal planning in the first place but are practitioners or decision-makers. The CPP might provide some inspiration from other countries and shows clearly that Viet Nam is not alone in the challenges it faces.

### Novelties in the CPP

- Critical treatment of mangrove reforestation and waterworks as equal elements of the coastal protection system.
- Consequent classification of the Mekong Delta coast.
- Provision of basic design parameters for protection works.
- Highlighting the importance of spatial coastal protection planning.
- Analysis of GIS-enabled coastline evolution since 1904.
- Online library with project reports, legal documents and abstracts of recent scientific literature in Vietnamese and English.
- Connecting coastal protection with water management and land-use in the inland (hinterland) of the Mekong Delta.
- Critical evaluation of existing and proposed technical measures.
- Suggestions for a second-line of defence, land-use and risk reduction concept for land area directly behind the sea-dyke.
- User-friendly online platform hosted by VNDMA under MARD with many download options for references and GIS-enabled data.
- Inclusion of actual lightweight drone-based coastal surveys.

### The CPP in detail

- Concrete recommendations for the entire 720 kilometres of coastline per section for a total of 71 sections.
- The current open sea-dyke trajectory has to be closed, which means about 678 kilometres of dyke has to be strengthened or is still to be constructed, as in Ca Mau Province at a length of 144 kilometres.
- The current trends allow no alternative to a dyke to prevent disasters for the residents and assets by flooding.
- A mangrove forest belt alone is not enough to protect flat land as clearly stated in line with the political leadership and residents.
- Nevertheless, the conservation of the existing mangroves and the rehabilitation of a mangrove belt with its shielding function and many ecosystem services should have the same priority.
- The mangroves are a fixed element of the entire protection concept. A total of 139 kilometres of sea-dyke has urgently to be better protected by massive revetments and toe protection.
- About 539 kilometres of earth dyke have to be strengthened, which means they have to be constructed up to the respective design water level with a much gentler slope than currently and with a lifespan of at least 50 years with adaptable profile for further strengthening.
- A total of 147 sea-slucies are proposed to be constructed, which would permit much better water management.
- Along 77 kilometres, alarming erosion can be only stopped by the construction of massive breakwaters or comparable measures.
- For about 290 kilometres of the coastline, breakwater and fences made of natural materials (bamboo, Melaleuca, others) are erected close to the coastline and recommended to stabilise the coast and enhance mangrove rehabilitation.
- The so-called T-fences (T-shaped groynes) turned out to be highly effective if applied along respective stretches. However, there are clearly limitations of the original constructions and therefore alternatives and combinations are supported.

2016

The Mekong Delta Forum (MDF) was organised by the Government and development partners, including a 2-day workshop on regional and cross-sectoral planning approaches for coastal protection set against the transformation of land-use.

VNFOREST issued two decisions on stimulating the rehabilitation of mangroves with the support of GIZ (Decision No. 1205/QD-BNN-TCLN and Decision No. 5365/QD-BNN-TCLN from 2016), resulting in the "Manual for 11 mangrove species" (2017) which provide detailed guidance on mangrove plantation for practitioners in the Red River Delta and the Mekong Delta.

Four workshops on coastal function zoning were conducted in Ca Mau Province between GIZ, UNEP, the Viet Nam Administration of Seas and Islands (VASI) under MONRE and Can Tho University (CTU), including five provincial sector ministries and decision-makers.

2016/2017

The online CPP offers a link to the tool for sea-dyke routing and set-back options. The tool has been developed in collaboration with the Southern Institute for Water Resources Planning (SIWRP), Royal HaskonigDHV and Deltares with co-funding from the Kingdom of the Netherlands presented by the Dutch Embassy in Hanoi, Viet Nam.

2017

The pilot approach for spatial coastal planning in Ca Mau Province was presented at the United Nations Ocean Conference in New York.

The CPP was presented at the Mekong Delta Conference in Can Tho chaired by the Prime Minister. The conference resulted in the Prime Minister's Resolution 120 on the sustainable use and development of the Mekong Delta region.

2018

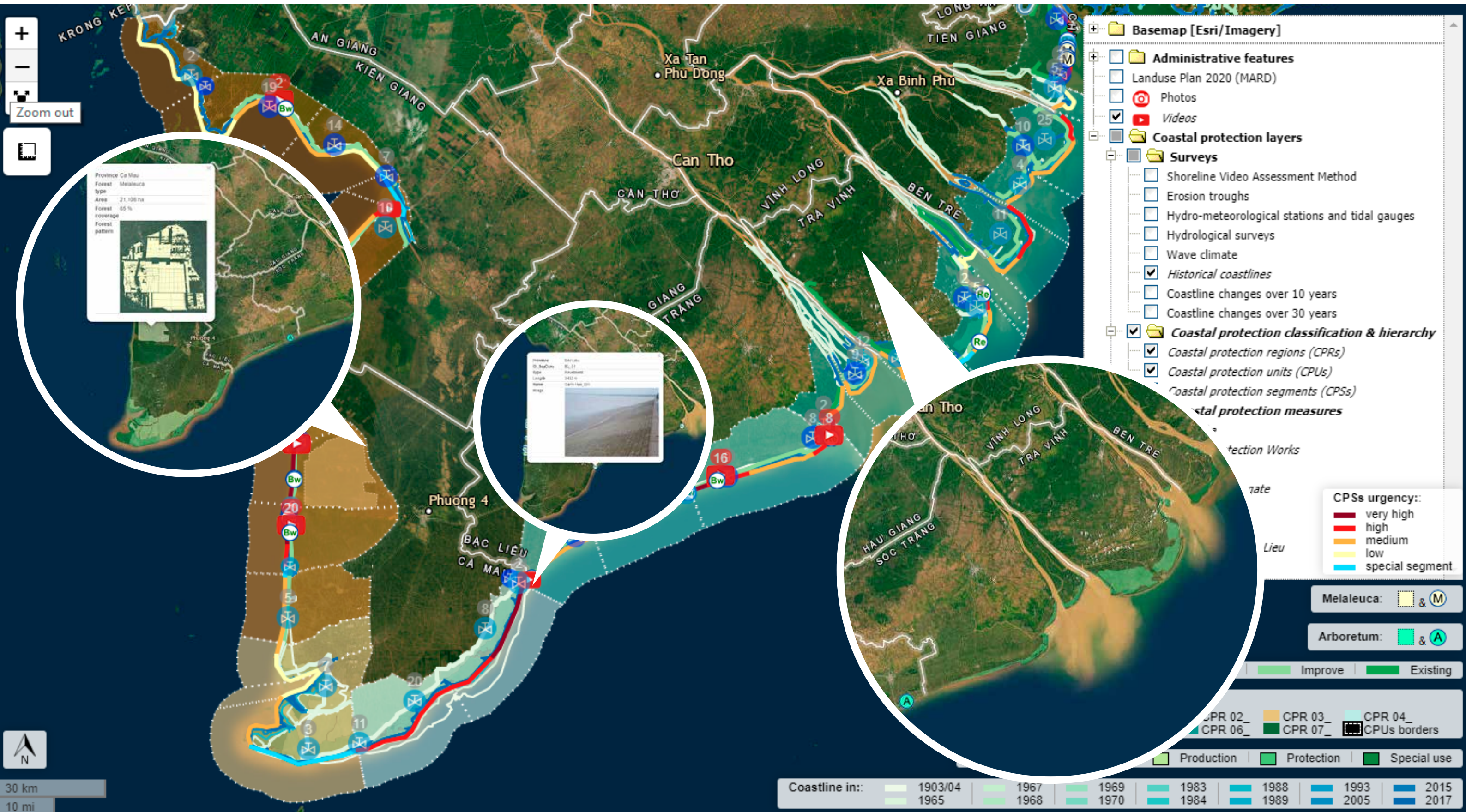
Launching event of the decision support tool, the "Coastal Protection Plan for the Mekong Delta" (2018-2040) by the Viet Nam Disaster Management Authority (VNDMA) under MARD.

The CPP can be accessed on "[coastal-protection-mekongdelta.com](http://coastal-protection-mekongdelta.com)" (as at July 2018).



# A quick look at the user interface of the CPP

The user interface of the CPP is characterized by a series of layers that can be activated according to the users' needs. Here, in the main view, the CPR, CPU, and CPS, as well as the historical shorelines are depicted.







## DIGITAL TRANSFORMATION

Digital transformation is bringing sweeping change at economic, political and societal levels across the globe. Nothing is impervious to digital change – it even affects the field of international cooperation. The digital evolution continuously changes the way we work, offering new opportunities and business potential, yet it also poses considerable challenges.

An increasing number of people in the developing world, also in rural areas, now have access to modern Information and Communication Technology (ICT), such as mobile and smart

phones, tablets, television and radio, as well as internet and digital services such as mobile banking, live news, and weather forecasting.

To name but one example, digital solutions offer the possibility of radically improving the potential relationship between smallholder farmers, agribusinesses, and service providers (including advisory services). They can enable farmers to access valuable, location-specific information to help them manage their farms, incorporating critical factors such as land size, rainfall and soil

type – and thereby help them boost productivity, profitability and sustainability.

ICMP actively explored opportunities for testing and disseminating new innovative technologies and started to convene technologies and technology providers that have the potential to transform smallholder agricultural systems as well as associated value chains, rendering them economically and ecologically sustainable (thus directly contributing to SDGs 2, 9, 13 and 15).

Sharing knowledge and experiences on best practices between the public and private sector, as well as local end-user groups and beneficiaries operating in the sphere of digital agriculture in Viet Nam, formed the basis for a series of interventions aimed at understanding knowledge gaps, and assessing the needs both on the technical side and from the farmers' perspective. This helped to identify potential and new research on development opportunities for universities and research organisations. Developing baselines and assessing the policy environment, identifying bottlenecks at various levels and potential solutions to facilitate a smooth yet rapid technological disruption of agriculture (and other sectors) using big data and ICT remains a task for the future.

Other examples in the field of water and irrigation management include efforts on hydraulic modelling, data harmonisation, and the subsequent conceptualisation of a complex irrigation supervisory control and data acquisition (SCADA) system that utilises advanced data transmission between gauges and water level monitoring stations for automated water and irrigation management and operation in the Quan Lo - Phung Hiep irrigation system. Benefits of such a system would be numerous: data harmonisation, compatibility and interoperability, a reduction of data redundancy through centralised data management, and the reduction of costs by centralising IT infrastructure, software development and IT administration, and ultimately – a more sound and timely decision making process.

As a partner in a consortium, ICMP also supported MARD in the use of satellite-based rice crop monitoring with the objective of reducing the vulnerability of smallholder farmers from hazards, such as floods and droughts.







### Digital coastal monitoring using lightweight drones

How can the coast be protected against floods, storms and erosion? How can innovation and technology help us find the best solutions for coastal protection? The coastline of the Mekong Delta is particularly difficult to monitor due to extensive mudflats, which make access exhausting and time-consuming.

As part of the activities in the field of coastal protection, ICMP piloted the cost-efficient application of new-generation lightweight drones – unmanned aerial vehicles (UAV) – for monitoring and mapping applications at national and provincial levels.

Lightweight drones are the perfect tool for this work because they:

- Save time and costs.
- Make remote areas observable.
- Provide accurate data of the current situation, thereby supporting evidence-based decision making.

Filming and photogrammetry are used to support forest management and planning, mapping, coastline management, management of water resources and the inspection of coastal protection measures. The technology is evolving rapidly and both the navigation as well as the data processing of visual results are becoming more sophisticated and user-friendly.

“In the past, field surveys using GPS took several hours and provided data only for the area observable from the ground around the walking track. Using drones at heights up to 200 metres, it is possible to stay on the dyke for video filming as well as aerial mapping. It saves time and workload. Photos for up to 100 hectares can be taken in less than 15 minutes. And back in the office, software is used to process and analyse the collected sets of photos. It supports us in our decision-making process”

– Mr. Hoang, forest protection officer of the Forest Protection Sub-Department in Soc Trang Province

The following provincial and national partners received support: Soc Trang Province Forest Protection Sub-Department; Bac Lieu Province Forest Protection Sub-Department; Ca Mau Province Irrigation Sub-Department; Kien Giang Province Forest Protection Sub-Department; An Giang Province Forest Protection

Sub-Department; Southern Institute for Water Resources Planning (SIWRP); Directorate of Water Resources (DWR); Viet Nam Disaster Management Authority (VNDMA); provincial Forest Management Boards (FMB), Southern Institute for Water Resources Research (SIWRR).



Delivered support and services included:

- Instruction on procurement of lightweight drone monitoring and mapping equipment (consisting of a drone, tablet, workstation computer, and perpetual data processing software licences).
- Technical advice to meet the needs of various partners regarding operating equipment and skills, resulting in the application of three different lightweight drone models throughout Viet Nam.
- Instruction in using drones for documentation and monitoring using video filming, automated flight mission execution for mapping big areas (up to 100 hectares within 13 minutes), data processing and data analysis.

As part of the (showcase) activity, “Generation of a detailed forest map for the complete coastal zone of Soc Trang Province using lightweight drone mapping technologies as the basis for annual updates”, close to 17,000 images – all captured within the first six months of 2018 – were taken from an altitude of up to 200 metres using a lightweight drone. The processed images resulted in a mapped area of 10,770 hectares, covering the three coastal districts of Soc Trang Province (Cu Lao Dung, Tran De and Vinh Chau). The mapped area contains 5272,5 hectares of protection forest (or mangrove forest), as well as adjacent mudflats, dykes and hinterland.

Further examples of special topics covered and investigated were remote tree species identification using drone imagery and biomass calculation for Payment for Ecosystem Services (PES) using drone imagery.

UAV mapping activities in Soc Trang Province	Mapped area (ha)	Forest in mapped area (ha)	Number of images
Cu Lao Dung	1,873	1,313.2	2,762
Tran De	1,296	686.1	2,480
Vinh Chau	7,600	3,273.2	11,575
<b>Total Soc Trang Province coastal area</b>	<b>10,769</b>	<b>5,272.5</b>	<b>16,817</b>





# WATER MANAGEMENT

Supporting better irrigation management and infrastructure operation



During the dry season low and decreased river flows cause major water shortages, drought and salt water intrusion.



Developments in upstream countries are also reducing the amount of water flowing down the Mekong River, while in other parts floods remain an issue.



It is paramount to harmonise the needs of different types of water users, at different timings, and of different quantities and qualities.

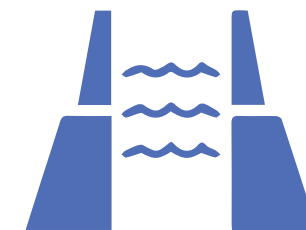
# WATER MANAGEMENT

The challenge of managing water resources in the face of a changing environment was further compounded by the ambiguity of recent climate change scenarios that indicate an equally likely chance of either increased or decreased flows.

ICMP worked with the relevant authorities, research institutions and stakeholders at central and provincial levels to respond to these challenges.

## Key Impacts

**14,266 km**  
of canals



**3.5 million**  
people

Operational regulations for the Quan Lo - Phung Hiep and Long Xuyen Quadrangle irrigation systems improved water management along **14,266 kilometres** of canals, which will benefit around **3.5 million** people and have a positive impact on **680,000 hectares** of agriculture and aquaculture land.



**680,000 ha**  
of agriculture and  
aquaculture land



A pre-feasibility study was drawn up that aims to increase the efficiency of a **USD 80 million flood control project** in the upper delta.

Directly contributing to  
**4 SDGs**





## Irrigation management in the Mekong Delta at a crossroads

The Mekong Delta is an agricultural region that is crisscrossed by thousands of big and small canals, all of which receive their water from the Mekong River, and many of which also carry salty or brackish water, depending on the tide, the time of the year, the distance to the coast and the needs of the water users. These canals provide water for hundreds of thousands of agriculture and aquaculture farms.

Located in this interface between fresh and saline waters, the irrigation infrastructure clearly has a high level of complexity. The same canals or sluice gates often have multiple tasks in flood drainage, fresh water supply, brackish and/or saline supply or prevention thereof, and pollution discharge. This complex situation is further escalated by the cross-boundary nature of the systems, and the lack of coordination in land-use and planning. The operation is therefore very tricky, and the challenge is to harmonise the needs of different types of water usages, at different timings, of different quantities and qualities, to ensure optimisation of the benefits and minimisation of conflicts and damages.

Irrigation management is under immense pressure. Firstly, studies forecast that the amount of water coming down the Mekong River will decrease in the future due to developments in upstream countries, including higher usage of water and new infrastructure projects such as dams. The question of how to nourish the Mekong Delta with less water is of crucial importance. In addition, recent climate change scenarios indicate an equally likely chance of either increased flows or decreased flows due to changes in seasonal rainfall in the upper catchment. These factors add to the challenge of managing water resources in the face of a changing environment.

These challenges form the backdrop for ICMPs work on irrigation management regulations.

## Policy package on water and irrigation management

The policy package on water and irrigation management addressed what may be the most crucial factor for the future of the Mekong Delta: water. Few areas in the world have a more widespread, but also more complicated irrigation system than the Mekong Delta. One problem is the rising salinity of the water, which – broadly speaking – is beneficial for aquaculture, but poses a considerable challenge for crop production. These kinds of conflicts arise both between water users in one province and across borders between provinces. Therefore, a coordination mechanism between the concerned provinces is of crucial importance for managing trade-offs in water and irrigation management – an issue that is even more pressing due to the stresses of seasonal and extreme floods and saline intrusion.

Faced with the prospect of less fresh water coming down the Mekong River and more salt water coming from the sea, partly due to sea level rise, authorities in the Mekong Delta need to find new approaches to managing how water is used and distributed. The policy package supported the authorities to jointly make these decisions. Yet, the full application of all measures described below may take several years, and many of the activities are extended into future considerations and investments.

## Setting the path for an Irrigation Information System (IIS)

The Irrigation Information System (IIS) can be considered as a specific form of the broader Water Resources Information System (WRIS). This is a comprehensive Information Technology (IT) system that was conceptualized based on the so-called “irrigation systems” classified by MARD to give decision-makers an overview of the status and performance of the water infrastructure in each irrigation system in

the country. The system is designed to give insights into the water needs of different users, the existing water infrastructures and their modes of operation, as well as the availability of water and ways to provide it to the users. Potentially, this information would then be the basis for the overall water, irrigation and agriculture planning and management in the Mekong Delta and in Viet Nam more broadly.

In its first phase, ICMP started to support the setting up of such an IIS and continued to do so in the follow-up phase. Nevertheless, the scope of the IIS is such that significant financial contributions from third parties – for instance from financial cooperation – are necessary to render the system fully operational, especially with regards to data collection and the necessary infrastructure instalments, such as a water monitoring network that covers all 110 large irrigation systems in Viet Nam.

## Improving water management in the Quan Lo - Phung Hiep and Long Xuyen Quadrangle irrigation systems

The next step down from the overall irrigation management in Viet Nam is the management of the big regional irrigation systems, such as the Quan Lo - Phung Hiep between Ca Mau, Bac Lieu and Soc Trang Provinces and the Long Xuyen Quadrangle between An Giang and Kien Giang Provinces. The operational regulations for these irrigation systems were supported by ICMP. In the form of technical legislation, these operational regulations guide water managers on how to operate the hydraulic structures (such as dams, sluice gates, pump stations etc.) in ways that maximize the benefits and minimize the costs of all concerned water users. This regional solution requires strong and close cooperation between the concerned provinces. The policy intervention benefits 3.5 million people and 680,000 hectares of agriculture and aquaculture land in both sub-regions.

## Promoting cooperation on water management in the Long Xuyen Quadrangle

Closely linked to the policy package on water and irrigation management, the cooperation agreement on water management in the Long Xuyen Quadrangle is a major step towards a joint approach to water management between the neighbouring Provinces of An Giang and Kien Giang. As a follow-up to the agreement, ICMP supported the drafting of new operational regulations for the management of the irrigation system in the Long Xuyen Quadrangle.

In the Long Xuyen Quadrangle, ICMP aimed to address the up-/downstream challenges through maximizing irrigation efficiency while managing issues of seasonal flooding, salt water intrusion, and competing demands for water. A central concern of the coastal Province of Kien Giang is the increasing salt water intrusion from the sea. This can be countered if more fresh water is coming down the canals from the upstream in An Giang Province, so this fresh water can push back the salt water and flush the canals. Furthermore, Kien Giang Province needs more information on when and how much water will come from An Giang Province to adjust their cropping calendars accordingly.

ICMP successfully brought two provinces together through a legally binding water management agreement with a set of objectives to improve the management of water resources across the Quadrangle and promoted a more sustainable and integrated approach to land and water resource use development. A Joint Technical Working Group (JTWG) consisting of managers and officials from DARD and the Department of Natural Resources and Environment (DONRE) of both provinces was established and made operational – to support implementation of the agreement.





As the Long Xuyen Quadrangle is bordered with Cambodia, its water management – especially during flood season – also has transboundary dimension. In this regard, ICMP also promoted the dialogue and information-sharing process between local authorities from two sides of the border to minimize the potential conflicts.

### **Guiding investments on flood management in the upper delta**

During the past decade, the flood pattern in the Long Xuyen Quadrangle has changed immensely. This partly came from global climatic change, but is largely due to the water development in the basin's upstream as well as the internal agriculture intensification within the Mekong Delta. Fully aware of this emerging context, ICMP conducted two important feasibility studies on flood- and water management in the upper delta – the “An Giang Province - Kien Giang Province Flood Management Project” and the “Tra Su - Tri Ton Reservoir for Flood Storage and Fresh Water Supply Project”. The feasibility studies will inform investment plans of at least USD 25 million. These studies serve as reliable baselines for Vietnamese authorities and donors in making sound investment decisions on flood management in this upper region of the delta.





## ENVIRONMENTAL EDUCATION AND AWARENESS-RAISING

Climate change is one factor threatening the ecosystems of the Mekong Delta; however, many problems are also human-induced – be it unsound agricultural practices, cutting mangrove trees for income or other damaging behaviours.

The reason behind these actions is often a lack of understanding about ecology. Environmental issues are rarely discussed in schools, especially with regards to the impacts humans have on the

environment. Among the local population, there is little awareness of the complexity of environmental interactions and the links to human wellbeing.

ICMP addressed this issue using a two-step approach. Firstly, the programme incorporated environmental issues into lesson plans at schools in several coastal provinces in the Mekong Delta. Secondly, ICMP moved beyond education to create broader environmental awareness to the public and public servants at local levels.



Nearly **100,000 books** printed for environmental education



More than **25,000 teachers** reached



Environmental issues introduced into the subjects of **biology, geography** and **civic education**

Adapted lesson plans and teaching materials have been officially adopted by the Ministry of Education and Training (MOET).

Materials were used by **1,300 teachers** in Kien Giang, An Giang, Long An and Dong Thap Provinces and in all **90 secondary and high schools** in Bac Lieu Province.

A study in Kien Giang Province shows: **96%** of polled primary school teachers have gained more knowledge about the environment; **93%** of polled primary school students have changed their behaviour towards the environment.



**24 events** hosted at local level



**9 drawing competitions**



**9 TV channels** reported



**Thematic broadcasts**

More awareness on environmental issues in the five programme provinces.

### Environmental education

In 2011, ICMP started to organise groups composed of local teachers to develop environmental education materials for secondary and high schools. The teachers integrated environmental and climate change related content into lesson plans for geography, biology and civic education, and developed locally relevant teaching materials to support the content. After testing the materials in selected schools, the Ministry for Education and Training (MOET) approved and endorsed the materials, which paves the way for their further use. Additionally, text books and work books for

primary schools were developed. All materials were designed in such a way that they can be combined into a "Teacher Tool Kit". The tool kit allows each teacher, school or province to expand and adapt the materials to their local and specific needs.

ICMP has conducted workshops for teachers in the five programme provinces to disseminate the school books and materials. In total, more than 25,000 teachers were engaged; 14,100 through training and 9,000 through the distribution the school books.

For environmental education, the teachers experimented with new teaching techniques,



including a more interactive and discussion-centred approach and the use of creative materials and methods, such as posters or taking photos of the immediate environment around the school and discussing them in class.

In Kien Giang Province, environmental education has already been integrated into four subjects at the Kien Giang Vocational College. Interviews with 40 teachers and 240 students showed that 92% of correspondents strongly agreed or agreed with the approach, content and usefulness of the programme to improve environmental awareness for both teachers and students at the college level.

### Environmental awareness

Beyond the introduction of environmental issues into formal education efforts, ICMP also organised extracurricular activities, such as drawing competitions for primary, junior-high and high school pupils focused on environmental protection and sustainable resource use. The best drawings were used for creating desk calendars – including a drawing in which a student drew the connections between sea, mangrove forests, livelihoods and the protection of the local population, thus proving his deep understanding of some of the interlinkages tackled by the project.

Furthermore, environmental awareness-raising was carried out through a roadshow. The roadshow took place in different villages to inform people about climate change and the importance of the mangrove forests. The activities of the roadshow were centred on quiz shows, interactive games, presentations and screenings of educational films.







## PROMOTING GENDER EQUALITY

### Climate change is not gender-neutral

The degree to which people are affected by climate change impacts is partly a function of their social status, gender, poverty, power and access to and control over resources. Despite the increasing acknowledgement of the different experiences and skills women and men bring to development and environmental sustainability efforts, women still have lesser economic, political and legal influence

and are hence less able to cope with – and are more exposed to – the adverse effects of the changing climate.

Drawing on women's experiences, knowledge and skills, and supporting their empowerment will make climate change responses more effective. However, the impacts of gender inequalities and women's recurrent socio-economic disadvantages continue to be ignored and remain a critical challenge to adaptation efforts. It is crucial that mitigation and adaptation efforts integrate gender

issues at all levels. This will minimize risks to women and children and ensure greater success in efforts to address climate change.

Against this backdrop, it is worth mentioning that Viet Nam has a strong track record of promoting gender equality and empowerment of women. Viet Nam's efforts are reflected in its legislative framework. Selected legal texts are the Law on Gender Equality (2006), the Law on the Prevention and Control of Domestic Violence (2007), the Decree on Strengthening the Inclusion of Gender in the Development of Legal Documents, the National Gender Equality Strategy, and numerous action plans at all levels.

However, the implementation of legislation and policy remains a challenge in Viet Nam – as in many other parts of the world. At the national level, institutions face challenges in public education and awareness-raising, reporting, gender analysis, collection of sex-disaggregated data and monitoring. Vietnamese women continue to face serious obstacles in their daily lives, including poverty, limited access to higher education and employment opportunities, as well as persistent discriminatory attitudes and behaviours.

### Supporting line departments to include gender-responsive climate change aspects in annual sectors plans

The gender equality and climate change response strategies and their action plans at national and provincial levels are in place. However, localities face challenges in translating those cross-cutting issues into viable actions. There exists knowledge on climate change response and gender, but in the understanding of linkages between them, there is a decisive knowledge gap. Besides, a legally binding mechanism for cross-sector cooperation in tackling the issues is missing. In 2016, ICMP initiated the first step in supporting the An Giang Province

Department of Labour, Invalids and Social Affairs (DOLISA) in strengthening the inclusion of climate change in Provincial Gender Action Plans (GEAPs).

The need for a better understanding of the linkages between climate change and gender equality, and why it is important to emphasize these linkages in different areas of work, such as agriculture and rural development, environment and natural resources management, planning and investment, resettlement and disaster risk management were addressed via a series of training sessions, consultancies and working sessions. DOLISA was introduced to the use of gender-disaggregated climate and vulnerability data for GEAP. Other content covered included the participatory assessment of gendered climate change vulnerabilities and linking them to plans and investment, as well as ways to check provincial climate change plans and investment, which then enable the proposal of activities for gender mainstreaming.

With ICMP's support and advocacy of the Department of Planning and Investment (DPI), the An Giang Province PPC took a further step in guiding the provincial line departments to incorporate gender-responsive climate change into the sectors plans in 2019-2020 via PPC Decision No. 5004. This piloting by An Giang Province, although an absolutely new approach, contributed to promoting both cross-cutting topics – gender equality and climate change response – in an annual planning process while simultaneously strengthening cross-sector coordination at provincial level.



## Timeline of gender-related activities

### 2013-2018

As part of the floating rice conservation model in Vinh Phuoc commune, An Giang Province, the commune Women's Union is leading the floating rice cultivation system initiative, facilitating exchange and sharing knowledge and experiences.

### 2014

Assessments on gender vulnerability in Ca Mau Province in the context of climate change

### 2016-2018

Support of provincial DOLISAs to strengthen the inclusion of climate change related topics in Provincial Gender Action Plans (GEAPs) and piloting the incorporation of gender-responsive climate change action into sector plans.

### 2011-2018

As part of the co-management model for the sustainable management of mangrove forests in Soc Trang and Ca Mau Provinces, the commune Women's Union is developing livelihood models.

### 2012 onwards

Livelihood assistance for women living in coastal areas through the revolving funds programme in Bac Lieu and Soc Trang Provinces.

### 2015

Practical guide on, "Integrating Gender in Climate Change and Disaster Risk Reduction" (published in cooperation with UN Women and CARE International).

### 2017-2018

Promotion of equal participation of male and female farmers in household economic activities. Capacity building for women in bookkeeping, household farming and training for female farmers of Farmer Interest Groups in Bac Lieu and Ca Mau Provinces.

### Further impacts of gender-related activities

A revolving fund targeting women reached 433 women with a credit amount of VND 1.570 million as part of four livelihood models in Bac Lieu and Soc Trang Provinces. Training on cultivation techniques and management and saving of funds was provided to 267 women and 60 staff of the Women's Union. The number of loans provided increased by almost one hundred percent after two years of support, including 8% who received

support from a fund that was raised and managed by the Women's Union.

ICMP supported the Women's Union of Vinh Phuoc commune to organise training and introduce new farming techniques for both male and female farmers. Through monthly training sessions of Farmer Cooperatives led by the Women's Union, local women were trained and learnt about improving rice production and protecting the environment. Therefore, they have become more confident and proactive in decision-making.







# PLANNING AND BUDGETING

## Supporting climate-responsive decision-making



Climate-responsive strategies and action plans are insufficiently reflected in both the Socio-Economic Development Plans (SEDPs) and annual budgets.



Improving future policy-making requires addressing potential disconnects between national and provincial decision-making and strategy formulation.

# PLANNING AND BUDGETING

In cooperation with provincial and national stakeholders, ICMP supported provincial climate-responsive, gender-sensitive planning and investment by:

- formulating Provincial Green Growth Action Plans (P-GGAPs);
- introducing different tools for the classification of climate-relevant expenditures while supporting the reporting on provincial climate-sensitive expenditures; and
- supporting the inclusion of gender-sensitive climate change aspects in provincial sectors plans (activities and impacts reported on in the chapter on promoting gender equality).

## Support to



### Authorities



Development of Provincial Green Growth Action Plans (P-GGAP)



Monitoring of provincial climate-sensitive investment for budget years from 2013 to 2017

## Key Impacts



Support of the formulation of An Giang Province's P-GGAP, which has been expanded to five other provinces in the Mekong Delta in cooperation with the Ministry of Planning and Investment (MPI) and the Macroeconomic Reforms/Green Growth Programme financed by BMZ and the EU and implemented by MPI and GIZ in Viet Nam.



ICMP built capacity on tracking and classifying climate-relevant public investment, which lays the basis for more climate-responsive planning and decision-making in 13 Mekong Delta provinces in collaboration with UNDP and MPI.

Directly contributing to  
**4 SDGs**





## Monitoring climate targets through budget classification

Awareness-raising and capacity development activities on the classification of climate-relevant expenditures have led to a broader understanding at the provincial level of the importance of not only monitoring substantial financial flows related to climate change, but also drawing conclusions to improve the relationship between climate-oriented policy formulation, sectoral planning and real action through spending.

Given that spending on climate change measures is set to increase in future, the green growth support by ICMP will help to ensure that this expenditure reflects the intentions and required actions of relevant strategies and action plans.

Viet Nam has been fulfilling its commitments as a signatory country to the Paris Agreement. In its Implementation Plan, Viet Nam set the goal to establish and operate a transparency system (monitoring, reporting and verification, MRV system) to monitor and assess the resource preparation and the implementation process. Accordingly, the supervision and reporting of climate change response expenditures from national and international resources are compulsory tasks for Viet Nam. The reporting process, in addition, lays a foundational step for further integrating climate-sensitive aspects into the planning and budgeting system, which is a necessity for an efficient response to climate change.

Given the difficulties in assessing climate expenditure statuses, ICMP introduced climate-relevant investment identification and classification tools through different capacity development measures.

The most southern province in the Mekong Delta, Ca Mau Province, was the first province in Viet Nam to be introduced to the marker classification as set by the Organisation for Economic Cooperation and Development and its Development Assistance Committee (OECD-DAC). The method was first applied during two training courses and another

international short-term mission in 2013. Back then, only official budget documents, published online by the Ministry of Finance (MOF), were used and analysed. However, only a very limited number of investment examples were showcased. As the bulk share of investment documentation remained inaccessible, only a fraction of investments could be tagged according to the OECD method.

In close cooperation with MPI, comprehensive progress was made on climate-responsive budget classification for four provinces (Bac Lieu, Ca Mau, Soc Trang and Kien Giang Provinces) for the budget years 2013-2015. A study applied a synthesised approach using both OECD-DAC markers, a UNDP-driven Climate Public Expenditure and Investment Review (CPEIR) and the “CC+GG” coefficient. It showed that during 2013-2015, three out of four provinces allocated more than 20% of their annual investment budgets on measures against the impacts of climate change, mostly focusing on adaptation measures. The four examined coastal provinces spent amounts between approximately USD 20-30 million per year for climate-responsive investments. Response investments were mostly earmarked for dykes, dyke protection or the prevention of salt water intrusion.

MPI has developed, with support from the World Bank, the “Guidelines on Identification and Classification of Public Investments for Climate Change and Green Growth” (approval pending), which is one of Viet Nam’s compulsory tasks required by the Paris Agreement. The methodology of the Guidelines is consistent with the joint Multilateral Development Bank (MDB) guiding principles and methodologies for tracking climate adaptation and mitigation finance. In collaboration among MPI, GIZ/ICMP, and UNDP/CIGG (Strengthening Capacity and Institutional Reform for Green Growth and Sustainable Development in Viet Nam), two technical training sessions on the application of the Guidelines and consultations with all 13 Mekong Delta provinces were conducted. The 13 provinces provided inputs for revising the Guidelines for their future applicability. In parallel, the study on classification of public investment for



Climate Change and Green Growth was conducted to track and analyse budget investment for 2016, 2017 and the mid-term investment plan 2016-2020.

The report addresses several tasks on ensuring the efficient use of medium-term investment capital and overall resource allocation on climate change adaptation measures and inter-provincial projects designated under the Prime Minister’s Resolution 120 on Sustainable and Climate Resilient Development of the Mekong Delta of Viet Nam. The report will be finalised by late 2018 and submitted to the National Committee for Climate Change (NCCC).

The Mekong Delta is the first application region for the Guidelines, which will be applied nation-wide for climate-responsive budget reporting. Lessons learned from the introduction of the Guidelines and the ongoing reporting process will facilitate the integration of climate change and green growth into investment programming.

## Supporting provincial climate planning and its integration in investment planning

Viet Nam’s Green Growth Strategy was approved by the Government in 2012. However, there are potential

gaps between national and provincial climate change response planning and implementation. Formulating Green Growth Action Plans has become a prerequisite for the planning processes of the Mekong Delta provinces as a reaction to the adverse effects of climate change. In 2015, ICMP cooperated with MPI and An Giang Province’s Department of Planning and Investment (DPI) to develop the Provincial Green Growth Action Plan (P-GGAP). The plan was approved in February 2017 by the An Giang PPC and serves as a model for replication in other provinces of the Mekong Delta. In cooperation with the Macroeconomic Reforms/Green Growth Programme, the Provincial Green Growth Action Plan for five other provinces, namely Kien Giang, Ca Mau, Soc Trang, Bac Lieu, and Hau Giang Provinces are being finalised.

The implementation of the P-GGAP is anticipated to boost links among the provinces based on sustainable development: improving environmental sustainability, protecting ecosystem diversity and ensuring that development is harmonious with economic, social and environmental goals. The P-GGAP approach seeks to ensure that plans are not just drawn up but are also integrated into provincial SEDP and annual budgets.





## ENHANCING REGIONAL COORDINATION

Integrated regional (and investment) planning has been on the political agenda in Viet Nam for decades. It is well understood that decisions on infrastructure investment and any kind of development planning is too fragmented if done only at provincial level. The allocation of resources is not efficient or effective, and growth opportunities are missed. Above all, it is weakening the economic competitiveness of Viet Nam in the long term. For natural resource management, such as rivers, coasts, water catchment areas,

and forest this is equally valid. It will be difficult or even impossible to protect and further develop the Mekong Delta without an integrated regional development approach.

By the end of 2017 the Vietnamese Planning Law had been reformed. It aimed at ensuring higher consistency in national, sectoral, regional and provincial master planning. It serves as a legal foundation for coordinated regional planning.

A master plan for the Mekong Delta has existed since 1998 but it is in fact not binding for most investment decisions. These decisions are still being made along sectoral (line ministries) and provincial (SEDP) lines.

In 2014, a separate Mekong Delta Plan was launched with support from the Netherlands and in collaboration with the Vietnamese scientific community. Although it is not an official government planning document, it has been – until today – serving as a reference document for the Government of Viet Nam as well as the international community.

In February 2015 during the Mekong Delta Forum in Ho Chi Minh City, ICMP and other partners invited all Mekong Delta provinces, key line ministries and international partners to a side event on regional cooperation. It was an exciting experience with inspiring and emotionally gripping debates and clearly showed how pressing this issue is.

Under ICMP, GIZ started getting engaged in this topic by working closely with the Central Economic Commission (CEC) of the Communist Party of Viet Nam, the Office of the Government (OOG), MPI, and provinces of the Mekong Delta. In 2015, the preparatory work for the Prime Minister's Decision 593 on regional coordination in the Mekong Delta was begun. A broad consultative process started with workshops in the Mekong Delta and Hanoi, including the engagement of Vietnamese and international experts. The Prime Minister's Decision 593 was issued on 6 April 2016 with international partners contributing substantially.

Just prior to that, in April 2016, a national conference chaired by the Deputy Prime Minister and the German Ambassador, with the participation of almost all provinces and central ministries, embassies and international organisations, was held to debate the options and obstacles for regional coordination in Viet Nam. Some international partners were organized into the Mekong Delta Working Group, including the Asian Development Bank (ADB), Australia, Belgium, France, Germany, the International Fund

for Agricultural Development (IFAD), the International Union for Conservation of Nature (IUCN), Japan, Korea, the Netherlands, Switzerland, the United Nations, the United States of America and the World Bank. The Group published a, "Joint development partner statement on regional coordination in Viet Nam". The topic was placed high on the agenda from that moment onwards.

The event was also extremely important in assisting the Central Economic Commission (CEC) of the Communist Party of Viet Nam to bring best practice initiatives in regional economic development and regional coordination into the Statement of the 12th Communist Party Congress for the period 2016-2021 and several related resolutions at national and provincial level.

In 2017, the first Mekong Delta Conference – chaired by the Prime Minister and other top political leaders – was organized in Can Tho by the Government of Viet Nam and was crucial in further developing and protecting the Mekong Delta and raising public awareness to an unprecedented level. The Mekong Delta Conference also included participants from academia and research, private sector representatives, ambassadors, international organisations and the mass media.

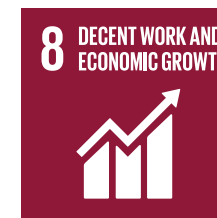
Specifically, with the Prime Minister's Resolution 120 on Sustainable and Climate Change Resilient Development for the Mekong Delta issued in 2017, regional coordination became a decisive pillar.

MPI will develop a new Mekong Delta Master Plan in 2018 and 2019 to foster regional development planning and provide a basis for coherent investment planning. All sectoral and provincial plans will follow this Master Plan. On this basis, domestic and international finance mobilization is expected to ease considerably since the investment environment will have substantially improved.





## SELECTED ICMP CONTRIBUTIONS TO THE SDGs



The 17 Sustainable Development Goals (SDGs) set by the United Nations in 2015 define global sustainable development priorities and aspirations for 2030 and seek to mobilize global efforts around a common set of goals and targets. The SDGs call for worldwide action among governments, business and civil society to end poverty and create a life of dignity and opportunity for all, within the boundaries of the planet.

The 17 global SDGs have been nationalized into 115 Viet Nam SDGs (VSDGs) targets in the “National Action Plan for Implementation of the Agenda 2030 for Sustainable Development”, based on Viet Nam’s development context and priorities, and building on the successful implementation of the Millennium Development Goals.

The illustration gives an overview of selected contributions of ICMP to the SDGs.





Viet Nam's goal is to end all forms of poverty everywhere.

One of the promoted targets is to improve the resilience of the poor and the vulnerable and reduce their exposure and vulnerability to climate-related extreme weather events and other economic, social, environmental shocks and disasters.

Introduction of **climate-smart** and sustainable rice cultivation and aquaculture models.

**84** livelihood models benefitting around **58,000 people**.



Viet Nam's goal is to eliminate hunger, ensure food security, improve nutrition and promote sustainable agricultural development.

One of the promoted targets is to apply resilient agricultural production modalities, increase productivity and output, maintain ecosystems and strengthen the capacity for adaptation to climate change and disasters as well as progressively improve land and soil quality.

The Alternate Wetting and Drying (AWD) technique of rice cultivation supports households to use **30%** less water and pesticides. It has been up-scaled in up to **35,000 hectares**.

The piloted environmentally friendly mangrove aquaculture techniques help to increase survival rates of shrimps by up to **80%**.



Viet Nam's goal is to achieve gender equality; empower and create enabling opportunities for women and girls.

One of the promoted targets is to ensure women's full, effective participation in, and equal opportunities for leadership at all policy-making levels in the political, economic and social life.

Promotion of women's full and effective participation in climate change response agendas by supporting the integration of climate change action plans into **Provincial Gender Action Plans** (GEAPs).



Viet Nam's goal is to ensure the full supply of and sustainably manage water resources and hygienic systems for all citizens.

One of the promoted targets is to substantially increase water-use efficiency across all fields/sectors and implement integrated water resources management.

The development of the operational regulations for the Quan Lo - Phung Hiep and Long Xuyen Quadrangle irrigation systems brings **14,266 kilometers** of canals under better management and **680,000 hectares** of agriculture and aquaculture land under more sustainable use.



Viet Nam's goal is to ensure sustainable, inclusive, and sustained economic growth and generate full, productive employment and decent work for all citizens.

One of the promoted targets is to encourage the formalization and growth of micro-, small- and medium-sized enterprises (MSMEs), including through improving access to financial services.

Support of **26** market linkage models between cooperatives, input suppliers and rice food companies.



Viet Nam's goal is to promote sustainable, resilient urban and rural development; ensure safe living and working environments, and ensure reasonable distribution of population and workforce by region.

One of the promoted targets is to significantly reduce the number of deaths and the number of people affected, and substantially decrease the direct economic losses relative to GDP, caused by natural and other disasters, with due attention paid to the protection of the poor and vulnerable.

Supporting the policy framework to maintain and further develop the **mangrove forest ecosystems** in promoting them as an ecosystem-based buffer protecting coastal areas and their people from natural hazards and thus ensure environmental security for **socio-economic development**.



Viet Nam's goal is to respond in a timely and effective manner to climate change and natural hazards.

One of the promoted targets is to strengthen the resilience and adaptive capacity to climate-related hazards and the capacity in responding to disasters.

Support of **3.5 million people** in the coastal provinces of the Mekong Delta for better protection against the effects of climate change with the improvement of policies and implementation of numerous climate-resilient interventions.



Viet Nam's goal is to conserve and sustainably utilize the ocean, the sea and marine resources for sustainable development.

One of the promoted targets is to strengthen the management and protection of marine, coastal and island ecosystems to avoid adverse impacts and improve the health and resilience of oceans.

The **"Coastal Protection Plan for the Mekong Delta (CPP)"**, at decision support tool, recommends detailed technical measures for the entire **720 kilometers** of coastline along the Mekong Delta.

The introduction of lightweight drones is expected to help monitor **590 kilometers** of coastline and about **53,000 hectares** of mangrove forest in the four coastal provinces of Kien Giang, Soc Trang, Ca Mau, and Bac Lieu Provinces.



Viet Nam's goal is to protect and sustainably develop forests; conserve biodiversity; develop ecosystem services; combat desertification; and prevent the degradation of and rehabilitate land resources.

One of the promoted targets is to strengthen the implementation of sustainable management of forests of various types, halt deforestation, restore degraded forests, promote afforestation and reforestation and increase forest cover to approximately 44-45% of the country's land area.

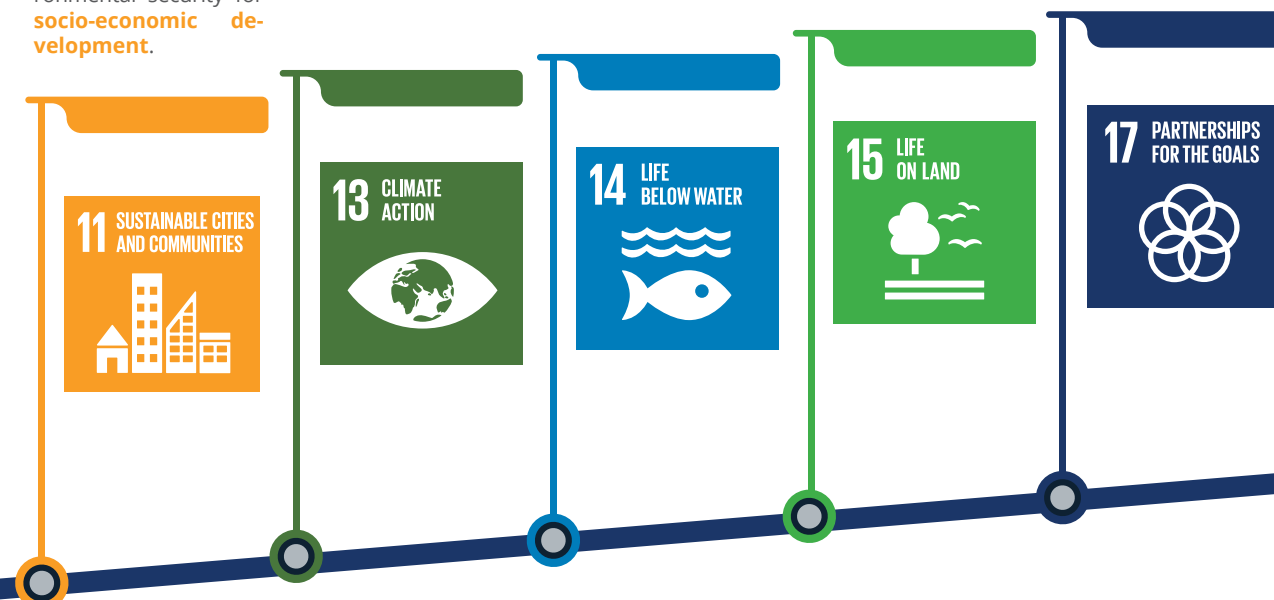
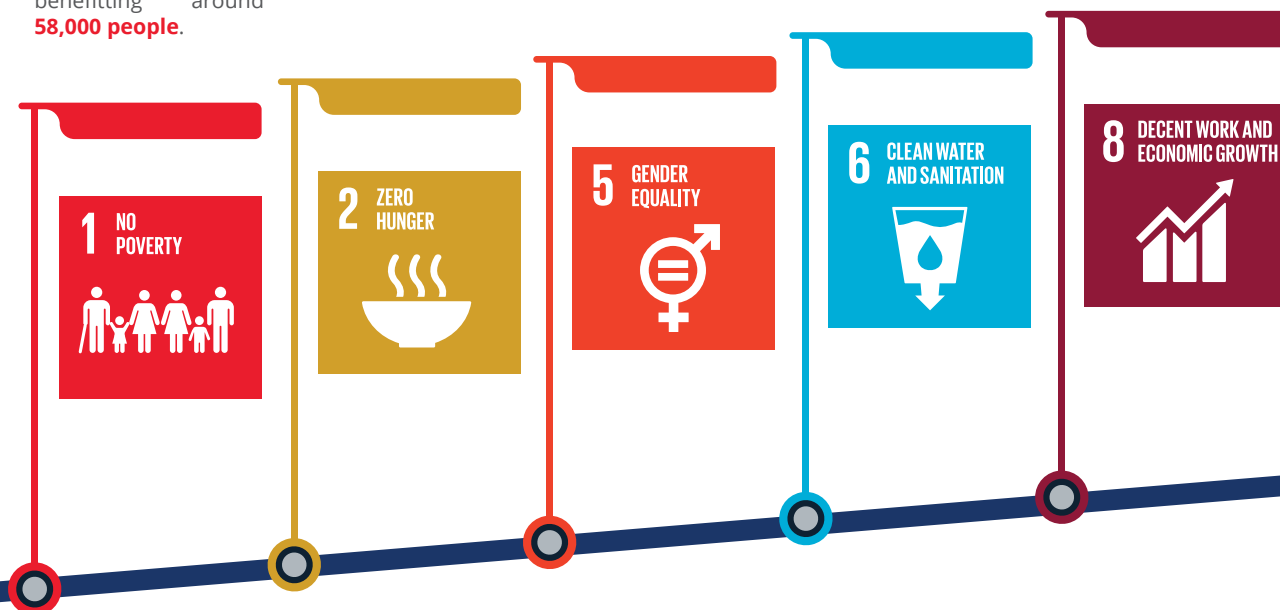
Support of afforestation of **46,000 hectares** of new coastal forests by 2020 – an equivalent to carbon sequestration of around **13.2 million tons of CO<sub>2</sub>**.



Viet Nam's goal is to strengthen implementation modalities and promote global partnerships for sustainable development.

One of the promoted targets is to promote public partnerships and public-private partnerships for sustainable development.

Support of the development of climate change related policies and investment in **13 Mekong Delta provinces** benefitting more than **17 million people**.







# PARTNERSHIPS AND COLLABORATION

## Interview with Dr. Christian Henckes

Dr. Christian Henckes is GIZ Programme Director and Chief Technical Advisor of the Integrated Coastal Management Programme (ICMP). He coordinates all GIZ operations in the Mekong Delta.



### A climate-resilient Mekong Delta requires long-term and robust partnerships



#### Would you please give an overview of the main objectives and results of the Integrated Coastal Management Programme (ICMP)?

The overarching vision of ICMP has always been to make the Mekong Delta and its inhabitants – particularly those living in the coastal zone – more resilient to the adverse effects of climate change while strengthening the livelihoods of the people.

As a means to an end, we have been working across technical and political fields. Together with the Government, we have been able to draw up a comprehensive, “Coastal Protection Plan for the Mekong Delta (CPP)” for 720 kilometres of coastline and for the coastal zone of the Mekong Delta in general.

We have succeeded in assisting the development of legislation on forest management; for instance, in co-management of natural resources, in which communities work together with authorities to strengthen the sustainable use and maintenance of mangrove forests.

Another major outcome was the Prime Minister’s Decision on regional coordination, regulating and enabling closer cooperation between the 13 provinces in the Delta.

GIZ was involved in triggering changes in discourse. The whole debate has really evolved over the years. We have been moving away from grey infrastructure measures and have been moving towards the inclusion of greener and ecosystem-based adaptation measures.

We have fostered dialogue between provinces. The whole set of questions around what a province such as Bac Lieu Province can learn from Ca Mau Province and vice versa was part

of an intense practice of knowledge sharing. This kind of exchange is now happening much more frequently thus clearly strengthening provincial capacities and certainly the capacities at an individual level.

#### In all of this, what has been the real success factors of the programme?

We must certainly highlight the leadership of the Government here. Making progress in this area can only be achieved with a strong political will.

A second aspect has been networking. We want to work with and through others. We can only be a part of the solution, providing ingredients to a bigger picture. The ability to integrate and synthesise is a recipe for achieving measurable impact.



### The leadership and vision of the Vietnamese government must be highlighted



Professional communication is always underestimated but of great necessity. This applies not only on a political level, but it is also a matter of raising awareness at community-level, showcasing how certain challenges can be overcome. Beating the drum and raising awareness on environmental issues is key.

Our management system in ICMP allowed us to respond rapidly to certain demands from communities, from provinces and from ministries. In reality, we have never followed a rigid plan but instead remained flexible, addressing demands and answering questions as they arose.

And lastly, mobilising national and international expertise was a success factor. Working intensely with Vietnamese universities and experts across research fields, while also bringing in international expertise, served as an important aspect and as the backbone of ICMP.



**What is your focus and vision for follow-up work? Are you optimistic that the previous successes in the provinces can be replicated in other regions?**

We will continue our close collaboration with the Government of Viet Nam to protect and develop the Mekong Delta. However, we will also focus on some new elements.

Our work will be extended to all 13 provinces of the Mekong Delta. We will continue to focus on the coastal zone but aspects like water management or regional coordination can only be tackled Delta-wide. We will further strengthen our partnerships with other institutions. What I initially said about our network will always remain true. Strong partnerships create lasting impact.

**“ True innovation creates location-specific adaptation, not replication ”**

Also, I don't believe in replication. Whatever has worked in Soc Trang Province might look very different in Ben Tre Province. We will try to learn from one case but at the end of the day you will always have to customise your approach. I don't expect that provinces will simply duplicate methods but certainly they will build upon these successes.

To give an example, when we started working on T-fences for the rehabilitation of mangrove forests, we created exact guidelines on how to manufacture and replicate these. Suddenly there were government departments working with bamboo and melaleuca fences of all shapes and technical specifications. I am not the one to judge which designs turned out to be the most effective but certainly our original thinking on this did trigger some additional ideas that were taken up by others. And I firmly believe in the power of this kind of innovation.

**Which role does regional coordination play in overcoming the challenges of the Mekong Delta?**

I will give you a simple example. If you implement measures upstream, say in An Giang Province or the municipality of Can Tho working on flood proofing and disaster risk reduction measures or rice crop management, it will most definitely have an impact on how much water is reaching Soc Trang Province downstream.

**“ Limited budgets call for coordinated approaches enabling sound and cost-effective decision-making ”**

We are talking about investment decisions of billions of euros. If your budget is limited – and all budgets are limited – coordination is the key to enable cost-effective decisions on expenditure. In an era where the whole nation of Viet Nam is debating the debt crisis and how to mobilise resources, this certainly presents itself as one way to minimise losses and to maximise the efficiency and impact of investments.

Regional coordination in and for the Mekong Delta is key, and it really is true for all of Viet Nam. It is just as true for the highlands as it is evident in the Red River Delta or elsewhere.

The critical aspect surrounding these issues is that they are very difficult to achieve since they may require changes to the constitution or the streamlining of administrative, political and legal procedures. It may sound impractical at times, but regional coordination and good governance really are the way forward.

However, provinces are competitors, too. Provincial leaders are responsible for their constituencies. Provinces aim to maximise their



revenues and growth rates, and try to attract investment. Sharing is not always in their interest. Having said this, I have great admiration for the champions in the Mekong Delta. Officials and politicians trying to overcome these institutional gaps are really agents of change whose voices we try to promote.

**What could be the next steps for regional coordination in the Mekong Delta?**

We truly need an entity that is responsible for driving the development of the whole Mekong Delta. Whether you choose to call it an *authority*, a *council*, *mechanism* or *platform* does not matter. All that matters is how well this entity is equipped and what it is mandated for. What kind of decision-making power does it come with? What kind of expertise and capacities is it equipped with? Does it have continuous access to financial resources or a development fund?

Government officials agree in principle, but it will be a matter of how strong the role of such an entity will be. There might be tensions between provinces, the central level and the new entity. But there is no way around this as I see it. No single line ministry, no single authority can deal with the issues of the Mekong Delta in isolation.

**On a more personal note. As the project closes, was there a defining moment or a major breakthrough from the programme's perspective that you would like to highlight?**

I think it was when we merged all provincial projects and started to think and work along the lines and logic of a regional programme. We ourselves were locked into a sort of fragmented state.

From a Government perspective, there was the Mekong Delta Forum in 2016 in Ho Chi Minh City where – for the first time really – we had the presence and undivided attention of the top leaders of the country. This of course culminated in last year's [2017] Mekong Delta Conference in Can Tho.

**“ Think integration, not isolation ”**

Also, we have started talks around data, data transparency and data sharing. But data availability across sectors, institutional domains and departments is just one side of the story. Any data is only ever as good as the decisions it enables, and this too is a major contribution of ICMP in its attempt to develop an evidence-base on which the provinces can inform their decisions. The introduction of



lightweight drone monitoring of mangrove forests and the internet-based “Coastal Protection Plan for the Mekong Delta (CPP)” are good examples.

The establishment of the Mekong Delta Working Group in 2015 certainly improved the coordination of international partners and donors in Viet Nam and the dialogue with the Government of Viet Nam.

Then, of course, the shock of the historic drought in the Delta in 2016, which cannot be forgotten. For the first time ever, salt water reached Can Tho. This really did sensitise the public. Not just the political leaders but everyone in Viet Nam.

*(Dr. Christian Henckes sighs, then smiles)*

I think all these aspects, solutions, decisions, events and happenings are contributing to a climate-resilient future for the Mekong Delta. In this sense, the Mekong Delta supporters are coming together under the joint slogan:



**Vì Đồng bằng sông Cửu Long**



## Mr. Nguyễn Văn Sơn

*Vice-Director of Management Board for Forestry Projects (MBFP)*

*National Programme Director Integrated Coastal Management Programme (ICMP)*

In the past, the achievements of distinct GIZ projects in different Mekong Delta provinces were often small in scale and focused at commune and district levels, making it impossible for these successes to be adopted at province level or institutionalized to produce macro-level effects.

Through its implementation from 2011 to 2018 in the five southern provinces around the Hau River, including An Giang, Kien Giang, Ca Mau, Bac Lieu and Soc Trang Provinces, ICMP has become a link between ministries, sectors, Mekong Delta provinces, and donors. The programme has worked effectively with the Ministry of Agriculture and Rural Development (MARD), the Ministry of Planning and Investment (MPI), the Ministry of Finance (MOF), the Ministry of Labour, Invalids and Social Affairs (MOLISA), and the Ministry of Natural Resources and Environment (MONRE) in developing and implementing climate-responsive plans. With the support of ICMP, Departments under MARD have worked together to develop plans and implement specific activities for climate resilience of coastal ecosystems in the Mekong Delta.

During project implementation, the five target provinces – An Giang, Kien Giang, Ca Mau, Bac Lieu, and Soc Trang Provinces – strengthened cooperation through round-table dialogues on water management, aquaculture, smart cultivation, mangrove rehabilitation and coastal protection. Thereby, ICMP has enhanced close cooperation between 13 provinces in the Mekong Delta on production and investment for further joint development activities.

ICMP has served as a bridge between donors and governments. Co-funded by the Governments of Australia, Germany and Viet Nam and implemented by GIZ, ICMP is an outstanding example of international cooperation in Viet Nam, demonstrating collaboration among development partners. Along with its strong partnerships with international development agencies, such as IUCN and the Netherlands, ICMPs successful models and solutions have been adopted by donors such as the Work Bank and the German Development Bank (KfW) for investment and duplication through financial cooperation projects in the Mekong Delta. It can be said that ICMP has paved the way for donors to the Mekong Delta – an area full of potential.

Despite its short-term duration, ICMP has contributed to changing the way that local authorities and residents in the Mekong Delta think and work through specific models that have been successfully piloted and replicated in 13 provinces. The cooperation between central and local authorities, ministries, sectors, and the engagement of the Government through the Prime Minister's Decision No.593/QĐ-TTg, dated April 6, 2016, on pilot coordination for regional social-economic development in the Mekong Delta, have shown the power of connection and replication.

The success of ICMP has laid a sound foundation for future cooperation programmes of the Government of Germany in the Mekong Delta, particularly the implementation of the upcoming Mekong Delta Climate Resilience Programme (MCRP).







### **Mrs. Đoàn Tuyết Nga**

*Director of the Department of Technology and International Cooperation  
Viet Nam Disaster Management Authority (VNDMA)*

The Viet Nam Disaster Management Authority (VNDMA) is highly appreciative of the work and achievements of ICMP over the past eight years. Close collaboration and trusting partnerships have succeeded in pushing the Mekong Delta onto the political agenda, particularly issues regarding water management and coastal protection. We have always recognised that the willingness to share and cooperate has been a major factor in the success of the programme. This is of particular importance when it comes to complex development issues – few areas in the world have a more widespread and complicated irrigation system than the Mekong Delta.

A significant issue concerns the rising salinity of water sources, which although beneficial for aquaculture, poses a considerable challenge for crop production. Conflicts can arise between water users across provincial borders. Therefore, a coordination mechanism between provinces is of crucial importance for managing trade-offs in water and irrigation management – an issue that is even more pressing due to the stresses of flooding and saline intrusion. Harmonising the needs of different types of water use and mitigating conflicts and damage is key for the sustainable development and climate-resilient future of the Mekong Delta.

In a similar vein, VNDMA highly values the achievements of ICMP regarding coastal protection planning. In aligning coastal protection planning at the regional level and fostering interprovincial cooperation, the programme has made a substantial contribution to the overall planning process in the Mekong Delta. Sharing know-how on technical solutions and modern tools for waterworks and mangrove rehabilitation, the programme initiated thinking on the “Coastal Protection Plan for the Mekong Delta (CPP)”. The CPP is a true interface between science and local stakeholders in practice, and an internet-based decision support tool that facilitates efforts to apply evidence-based decision-making along the Mekong Delta’s entire 720 kilometres of shoreline.










- ICMP was featured in around 500 media articles.
- More than 30 videos are online at the ICMP YouTube channel ([https://www.youtube.com/channel/UCWY\\_IX5-dZPAMNPUx-LJfYw](https://www.youtube.com/channel/UCWY_IX5-dZPAMNPUx-LJfYw)).
- Relaunch of the ICMP Webpage in 2015.
- Entries on Australian and German Embassy Facebook profiles.
- Posts on websites of Vietnamese and German Ministries.

ICMP generated strong interest from both the national and international media over the years. For ICMP, the prime objective of its communication efforts was to support the programme in reaching its objectives and to promote the partnership among the Governments of Australia, Germany and Viet Nam.

Since its second phase (2014), the focus of ICMP was on strengthening the understanding of the need for a government-led initiative for the Mekong Delta; for instance, the Mekong Delta Climate Resilience Initiative. Central themes like regional coordination and climate resilience were always among the key messages.

The documentary, “T-fence, a solution for controlling coastal erosion”, co-produced by GIZ Viet Nam, won two Golden Lotus Prizes for the best scientific documentary film and the best director, Mr. Phung Tu, at the 20<sup>th</sup> Viet Nam Film Festival, which took place from 24<sup>th</sup> to 28<sup>th</sup> November 2017 in Da Nang. In 2016, the film was awarded the Golden Kite Award by the Viet Nam Cinema Association. The film was presented at the United Nations Ocean Conference in New York and at many international and national events within Viet Nam.

MPI	VTV1	BMZ
<p>ICMP was selected as one of the development cooperation programmes that featured most prominently on the website of the Ministry of Planning and Investment (MPI).</p> <p></p> <p><b>MPI website</b></p> <p><a href="http://cfovn.mpi.gov.vn/tabid/67/articleType/ArticleView/articleId/554/Default.aspx">http://cfovn.mpi.gov.vn/tabid/67/articleType/ArticleView/articleId/554/Default.aspx</a></p>	<p>The conference on sustainable and climate-resilient development of the Mekong Delta was held in Can Tho in 2017. Over two days, the conference focused on overall planning, sustainable agriculture, irrigation infrastructure, disaster risk reduction, as well as opportunities in transforming development modalities for the Mekong Delta.</p> <p>International organisations, including the World Bank, GIZ and UNDP also contributed many solutions for the improvement of livelihoods, integrated coastal management, and effective approaches for mitigation and adaptation in the context of climate change.</p> <p></p> <p><b>VTV1</b></p>	<p>ICMP was selected as one of the development cooperation programmes that featured most prominently on the website of the German Federal Ministry for Economic Cooperation and Development (BMZ). The website includes a detailed article on ICMPs interventions in the Mekong Delta.</p> <p></p> <p><b>BMZ website</b></p> <p><a href="http://www.bmz.de/en/issues/klimaschutz/climate-risk-management/cooperation-in-action/protecting-mangroves/index.html">http://www.bmz.de/en/issues/klimaschutz/climate-risk-management/cooperation-in-action/protecting-mangroves/index.html</a></p>



## ICMP Field Trips to the Mekong Delta

One of the most effective communication channels of ICMP proved to be its high-level field trips to the Mekong Delta. ICMP successfully organised more than 10 high-level field trips for Australian, German and Vietnamese delegations to the Mekong Delta. The purpose of the field trips was to give Vietnamese and international decision-makers a deeper understanding of the challenges in the Mekong Delta and the work that ICMP was supporting.



**6-7 July 2015**

MARD Vice Minister Hoang Van Thang participating in coastal erosion control workshop for the Mekong Delta in Soc Trang Province.



**17-18 November 2015**

Mrs. Claire Ireland, then Development Counsellor of the Australian Embassy joining a successful press trip for national journalists and reporters to the Mekong Delta with 20 participants from several media agencies.

**17-19 November 2016**

Mrs. Edelgard Bulmahn, then Vice President of the German Bundestag, visiting Can Tho and Bac Lieu Province



**27-30 November 2016**

HE Mr. Craig Chittick, Ambassador of the Commonwealth of Australia to Viet Nam and HE Mr. Christian Berger, Ambassador of the Federal Republic of Germany to Viet Nam, visiting Can Tho, An Giang and Kien Giang Provinces.



**17-19 March 2017**

Mrs. Cornelia Richter, then member of the GIZ Management Board, visiting Can Tho, Bac Lieu and Ca Mau Provinces.

**6 November 2017**

MARD Vice Minister Tran Thanh Nam participating in the workshop, "Agricultural cooperatives development: experience and prospects for development cooperation" in Ho Chi Minh City.



# OUTLOOK THE MEKONG DELTA CLIMATE RESILIENCE PROGRAMME (MCRP)



Donors

German Federal Ministry for Economic Cooperation and Development (BMZ)



Lead executing agency

Ministry of Agriculture and Rural Development of Viet Nam (MARD)

Project term

2019-2021



Implementing agency

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Project volume

EUR 7.000.000

Objective

Supporting the Vietnamese authorities on their path for a sustainable development of the Mekong Delta through the climate-resilient management of natural resources along the coast.



Geographical scope

National level and 13 Mekong Delta provinces



The Mekong Delta Climate Resilience Programme (MCRP) as a follow-up to the Integrated Coastal Management Programme (ICMP) is funded by the Governments of Germany and Viet Nam. Its objective is to support the Vietnamese authorities on their path for a sustainable development of the Mekong Delta through the climate-resilient management of natural resources along the coast.

## Key Working Areas

There are three key working areas under MCRP:



1 Governance support for the national level and 13 Mekong Delta provinces:

Supporting the establishment of an institutional framework under the Prime Minister's Decision 593 and the Prime Minister's Resolution 120 for regional coordination in the Mekong Delta



2 Investment policies for the national level and 13 Mekong Delta provinces:

Supporting the improvement of investment planning and coordination for climate-resilient and gender-sensitive land and water-use management, including coastal protection for the Mekong Delta.



3 Technology and Solutions for coastal provinces of the Mekong Delta:

Intensifying the use of innovative and climate-adapted technologies and solutions for the Mekong Delta.







As a federally owned enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development.

**Published by**

Deutsche Gesellschaft für  
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices  
Bonn and Eschborn, Germany

Integrated Coastal Management Programme (ICMP)

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**Text**

Integrated Coastal Management Programme (ICMP)

**Photo credits**

GIZ

**Design and layout**

Luck House

**Printed by**

Golden Sky Co., Ltd.

**On behalf of the**

Australian Department of Foreign Affairs and Trade (DFAT)  
German Federal Ministry for Economic Cooperation and Development (BMZ)

*GIZ is responsible for the content of this publication.*

Hanoi 2018

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