



A success story from the Mekong Delta

# DIGITAL COASTAL MONITORING USING LIGHTWEIGHT DRONES



The Mekong Delta is one of the most vulnerable deltas in the world. Climate change impacts such as rising sea levels and erosion, in combination with upstream development threaten the existence of the region and the local people. According to an official study, by 2100 38% of the Mekong Delta area may be lost to the sea. The coastal mangrove forests which protect

the hinterlands from flooding and storms are declining dramatically. The problems along the coast are rapidly worsening; the resident communities are endangered.

**How can the coast be protected against floods, storms and erosion? How can innovation help us finding the best solution for coastal protection?**



Drawing on experience gained from around 10 years working in the region, Germany and Australia are supporting the Vietnamese Government with the application of new techniques to develop measures to protect mangrove forests and coastal areas. One of the most innovative measures in this area is using the new generation lightweight drones. They play an increasingly important role in the systematic monitoring of coastal areas and forest rehabilitation around the world. The technology is evolving very fast and both the navigation as well and the data processing of visual results are becoming more sophisticated and user-friendly.

As part of our activities in the field of coastal protection we are piloting the innovative and cost-efficient application of lightweight drones for monitoring and mapping applications on national and local levels.

The coastline of the Mekong Delta is difficult to monitor due

to extensive mudflats which make access and walking exhausting and time-consuming. Drones are the perfect tool for this work, saving time and costs, making remote areas observable, and providing accurate data of the current situation, thereby supporting information-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.

“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, told us enthusiastically.

With the application of drones, we are in the frontline of coastal protection techniques. The technology is being scaled up in neighbouring provinces and at national level. It creates a platform to exchange information and experience. “Such innovative technology should be used in the long term and sustainably”, said Mr Hoang. In future, regional planning institutions might join the activity and further fields of application will be explored, such as agriculture and irrigation. The outlook of this technology is excellent as it enables cost-efficient planning and management of coastal zones in the Mekong Delta.

The Integrated Coastal Management Programme (ICMP) is a development programme funded by the governments of Australia, Germany and Viet Nam. Its objective is to support the Vietnamese authorities in preparing the coastal area of the Mekong Delta for a changing environment and to lay the foundations for sustainable growth. The programme works in six interlinked working areas: agriculture, aquaculture, coastal protection, forest, planning and budgeting, and water management.