

## 1.4 Technology action plan, project ideas, and other issues in the Black Sea coastal zone sector

### 1.4.1 TAP for the introduction of the reef-balls technology

Following actions have been identified as core actions for transfer and implementation of underwater artificial reef-ball technology:

- **Technology market survey.** Country's priority is to get know-how of the reef-ball technology along with training and to produce it locally. This reduces the shipping expenses and increases the local capacity. To establish joint venture with producer is the next acceptable option. The option less attractive for the country is to purchase a ready product and to import it to the country. However, the last option is not excluded as an initial step (pilot project) for Anaklia segment. In this regard all possibilities existing at the international market should be well investigated to get technically and commercially most appropriate for the country option.
- As far as a technology is new, the **ownership** should be established. There are three options under consideration. The first one considers this technology as a public good (owner is central or most likely local government) for coastal zone protection imported and maintained by the government and offered as an incentive (similar to other incentives already offered by the government to the private sector for development of this segment) to the private sector for developing of diving tourism. Another option is intensive raising of awareness on the perspectives of this technology among private sector operating in tourism development section. Combination of these two options seems to be most cost-effective and less business risk comprising option if Public Private Partnership approach will be applied as far as both partners have interest and profit from this technology. For the government (central or local) this is a coastal zone protection technology which is the direct responsibility of government while for tourism business it could be an additional income and perspective.
- **Capacity building.** The diving tourism elements already are familiar in the country. However, capacity of this type of tourism should be increased and strengthened. Particular elements for training are: marketing, safety measures, code of international standards.

### 1.4.2 TAP for the decentralized early warning system

Following actions have been identified as core actions for implementation of decentralized early warning systems at the community level:

- Establishing meteorological monitoring system;
- Establishing tidal and sea level raise detecting system;
- Establish capacity (software models and trained people) to forecast the location and scale of threats;
- Establishing an organizing committee (leaders of the community and civil society, NGOs, representatives of local authorities and the private sector);
- Producing a participatory emergency and contingency plan;
- Implementing or strengthening of the existing communication system: early warnings, dissemination of prevention, mitigation and adaptation measures.

It should be highlighted that early warning system is very important instrument reducing damages, but not so effective without other protective measures such as: beach nourishment, artificial/natural knolls/dunes adjusted to the sea level raise, wave breakers, etc. Therefore, combination of different options is recommended in case of Anaklia.

### 1.4.3 TAP for the beach nourishment in Anaklia segment

Beach nourishment technology is not a new technology for Georgia and it has been using since 1960s. Technology has very high maintenance costs, depends on availability of inert materials and accurate investigation of underwater geology. Because of high costs, the technology has not been used almost for 15 years. Sea coastal zone protection service renewed this process in 2004 and was used in two sites (Kobuleti and Adlia). This technology is recommended by the TNA expert group for Adlia segment as well. Following actions should be taken for implementation of this technology: