

## What we do

The environment continues to function as the nation's resource base for essential products and to support broad-scale development. It is the same environment that supports critical livelihood activities of upland and coastal communities and provides ecological services for the country.

As we extract resources from the environment, there is a critical need to ensure the sustainability of the environment and regeneration of resources through effective management. However, continuing political and social neglect of the core commitments and actions is straining the environment to a much greater extent that the renewal and regeneration is occurring.

The vision is to reverse this trend, alleviate the extensive poverty and attain the needed environmental balance and viable growth.

## Geoinformatics

ESSC's approach to environmental mapping makes significant contribution to building people's capacities to collectively manage and plan towards an improvement of their way of life through a more responsive management of the environment.

Enhanced decision-making is achieved by promoting and sustaining the applications of Geographic Information Systems (GIS) and Remote Sensing (RS) technologies for:

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community-based natural resource management

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development planning and policy

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trade

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investment

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international development assistance

Close collaboration with international institutions and national government agencies has enabled ESSC to integrate disaggregated information into a National Watershed Database (NWD). The NWD contains the topographic and watershed delineation information that includes a collection of recent (ca. 1999-2002) satellite images of select areas in Philippines. With three levels of datasets, the NWD provides critical information on the interaction of biophysical processes and socio-economic dynamics that impact on watersheds.

In the Philippines, particularly in Mindanao, ESSC's partnership with European universities highlights the solid research foundation in the use of geomatic tools to facilitate greater understanding of the impact of human activities on the environment. With ongoing development of geoinformatic tools, ESSC would be able to promote wider sharing of relevant data to a diverse audience.

## Cultural Engagement

### Violence

remains part of the social landscape in Southern Mindanao. Yet there are many stories showing human engagement drawing out the potential for change. ESSC's engagement is currently focused in coastal and upland communities in the Province of Maguindanao. The engagement process is that of working with the community to understand the tripartite cultural composition in Upi - Teduray, Christian settlers, and Muslim Maguindanao. Oral tradition suggests that the Teduray and Maguindanao are closely related by consanguinity but separated by religious adherence. Yet, this difference did not hinder the continuance of their traditional relations. The effort of people to find a way to move forward amidst the cultural difference and historical violence is a manifestation that co-existence is possible, as it was before.

ESSC seeks to understand the situation and dynamics of the local communities by drawing them into local government planning processes, particularly the Barangay Development Planning. The Philippine Local Government Code mandates local governments including barangays to prepare comprehensive multi-sectoral plans. The strategies are to assist the barangays fulfill this mandate and to serve as a venue for ESSC to accompany the community and to understand their experience of peace and conflict.

## Resource Monitoring

It has been almost 20 years since the last comprehensive national land use inventory in the Philippines.

In 1986, the National Mapping Resource Information Authority (NAMRIA) conducted a national land use inventory using satellite imagery from the French SPOT earth observation satellite. In 1993, the National Land Use Act was registered for approval of Philippine Congress for lack of a national land use policy. To date, the national guidelines for land and water use remain docketed for legislative discussion.

The first ESSC water catchment research, undertaken in 1994, was conducted at the small scale where limited aspects of the current hydrological understanding can be consolidated to a national scale. The Weirs in catchment range and intensity of the area influences today within other catchments is increasing and the impacts have yet to be fully understood, particularly in relation to agriculture and other local business not agri related, and households. Also a better understanding is needed of how these catchments are likely to behave under future and extreme meteorological conditions. Hence, local and provincial management plans for these catchments need to be underpinned by scientific/technical understandings as to how hydrological and ecological regimes interact in these catchments.

The continuing effort of ESSC is to collect primary data from automated weather stations (AWS), manual rain gauges, stream gauges, and weirs in catchments where we operate. The interface of primary hydrological data and geoinformatics with community-derived data continue to develop ESSC's research standards and methods on understanding the specifics of water and watershed dynamics.

Research standards that were developed address both well-established and emerging NRM applications in biodiversity, climate change, and criteria and indicators development for sustainable forest management (SFM) and integrated watershed resource management (IWRM). This allow the institute to present the analyses more comprehensively to the community, local government units, regional line agencies to provide them bases for understanding the change and policy adaptation needed in water and nutrient resource sustainability in the uplands.

## Environmental Mapping

Within ESSC this is a continuing process of exploration and exchange in research and institutional collaboration. For over 20 years, people in ESSC hve been working with maps, developing skills and methodologies to serve marginal communities and protecting the environment.

The primary approach is to acquire new knowledge about people and their environment through Community Resource Mapping

. This is a socio-cultural method that provides people a forum to share community perceptions and an understanding of their relationship with land and water. Spatial and cultural information are technically integrated with more geographically accurate information such as land use and location, water resource distribution and tenure.

Communities, local governments and civil society groups are drawn to 1) seek acknowledgement of changes in people's way of life; 2) obtain agreement on action or non-action; 3) strategise poverty reduction through changes in resource use practices; 4) develop management plans; 5) identify monitoring indicators and improvements; and 6) identify mechanisms in supportive markets and compensation for local initiatives in resource use and management.