ASEANO
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REPORT PRIMER

MAPPING AND CHARACTERIZATION OF IMUS RIVER WATERSHED USING GEOGRAPHIC INFORMATION SYSTEM AND REMOTE SENSING TECHNOLOGY

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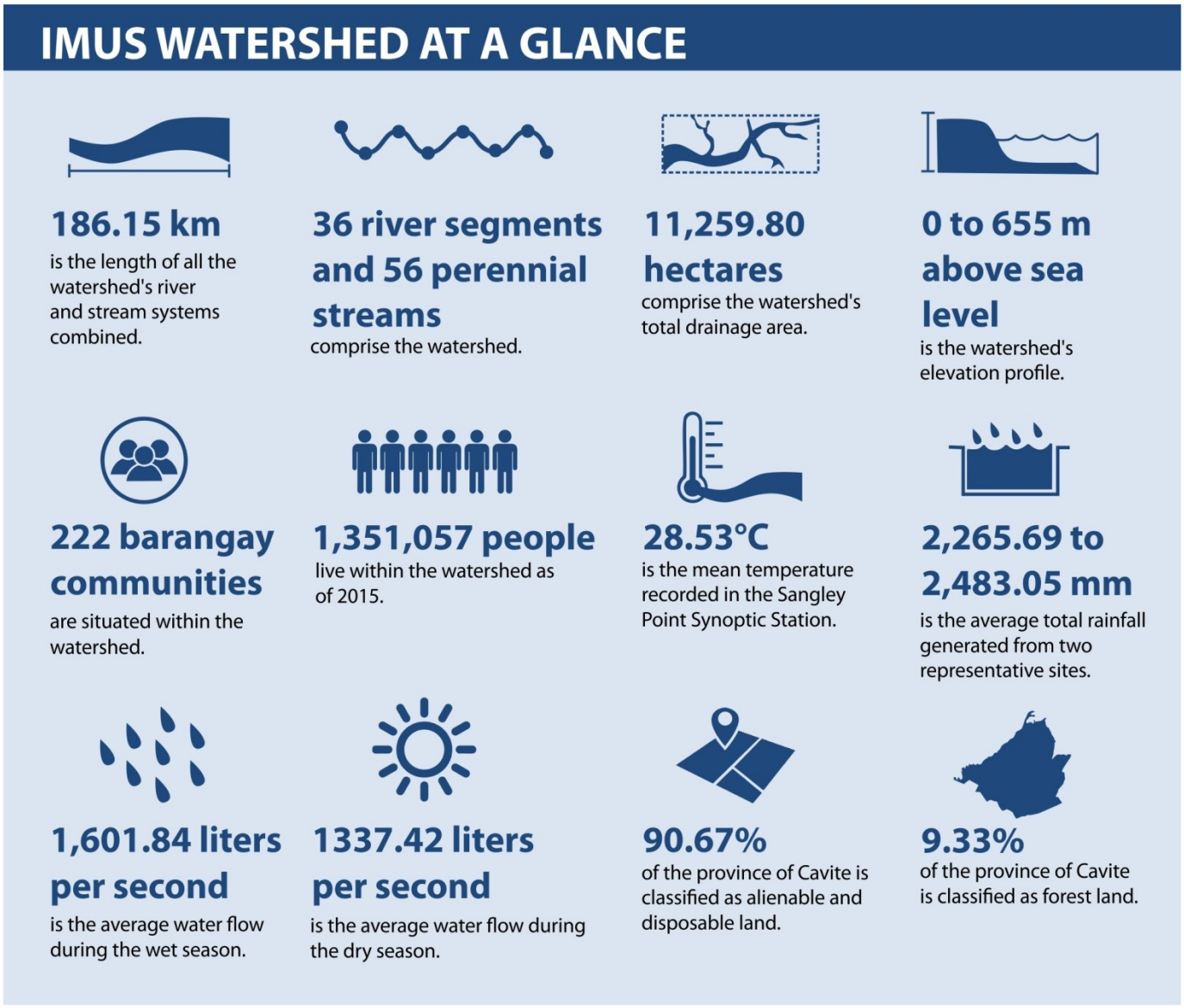
Portions of the Imus River in Cavite are still in relatively good condition, with ample vegetation and aquatic life. Shown is an upland riverscape in Silang. **(Gregg Yan / PEMSEA)**

River systems acts as major pathways for the transport of waste, particularly non-biodegradable plastics. Of the land-based waste which enters rivers, most ends up in our oceans.

The **Imus River watershed** is located in the Philippine province of Cavite, south of Manila. It flows into Manila Bay, a pollution hotspot. This study delineated and mapped the physical boundaries of the watershed. It studied aspects of physical geography, such as topographic features, stream characteristics, geomorphology, land cover, hydro-climatic characteristics of

the watershed, as well as human geography, such as political subdivisions, population distribution, plus land use.

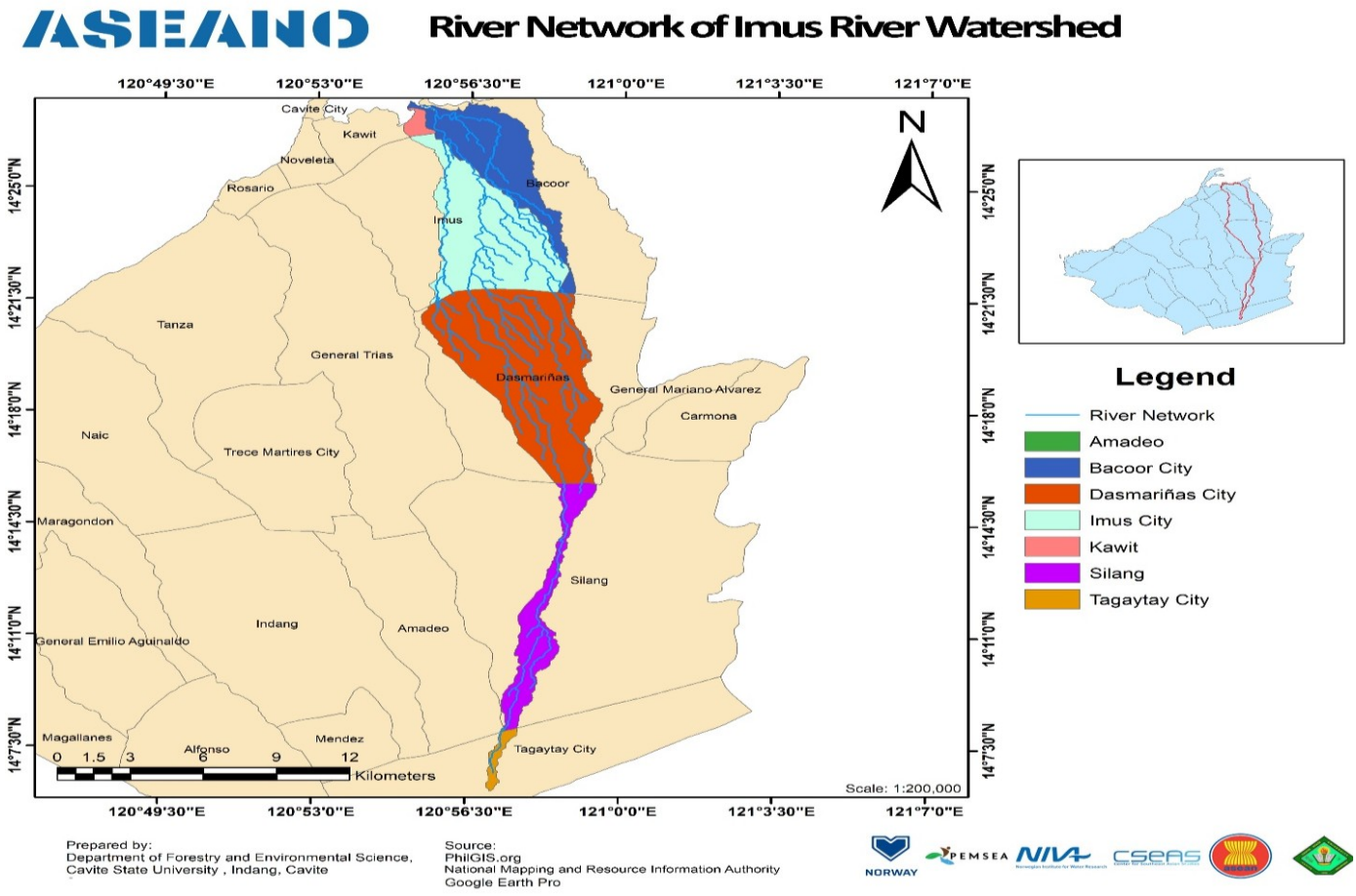


Both primary and secondary data sources were used to make comprehensive land use maps, population maps, and hydro-climatic data analyses. The boundary of the Imus River watershed was established using a digital elevation model of the province of Cavite in ArcGIS. Sangley Point Synoptic Station in Cavite and the CvSU-PAGASA Agrometeorological Station in Indang were used to assess the general hydro-climatic condition of IRW due to their close proximity to the watershed.

The total drainage area of the Imus River watershed is 11,259.80 hectares, and its elevation ranges from 0 to 655 meters above sea level. Areas considered lowland include parts of Kawit,

Imus and Bacoor. A centrally hilly area covers parts of Imus, Bacoor and the majority of communities in Dasmariñas and Silang. The upland area covers parts of Silang, Amadeo and Tagaytay. There were 56 perennial streams identified with a total length of 186.15 km and 36 river segments. These can be divided into three sub-watersheds, each with their own characteristics.

A total of 222 barangay communities are situated fully or partially within the boundaries of the watershed, and as of 2015 the estimated population of the watershed is 1,351,057 people. 90.67% of the province is classified as alienable and disposable land, divided into production land (55.24%) and built-up areas (44.76%).



The Imus River watershed is divided into three zones. An upland area covers parts of Silang, Amadeo, and Tagaytay. A central hilly area covers parts of Imus, Bacoor, and the majority of communities in Dasmariñas and Silang. Lastly, a lowland area covers parts of Kawit, Imus, and Bacoor. **(PRF)**

Normal mean temperatures ranged from 26.20°C to 28.53°C, while average total annual rainfall ranged from 2,265.69 mm to 2,483.05 mm. The average flow during wet season was 1,601.84 liters per second, while the average flow during dry season was 1,337.42 liters per second.

Lowland riverside scenery in Bacoor. Riverside vegetation along the Imus River varies widely, from fruit-bearing trees in upland areas to thriving mangrove forests closer to the coast. **(Gregg Yan / PEMSEA)**

ABOUT PROJECT ASEANO

East Asian countries produce over half of our world's marine plastic pollution. Rivers act like conveyor belts to discharge waste to the oceans.

To stem this flow, Project ASEANO is developing practical and sustainable measures to reduce the impacts of plastic pollution and their implications on both socioeconomic development and the environment.

The ASEAN – Norway local capacity development project is a three year project that aims to enhance local capacity on monitoring and understanding the source, flow and nature of riverine waste. It aims to strengthen local enforcement and provide practical solutions to tackle problems at the local level.

The project uses an integrated solid waste management approach and focuses on the city and municipal level through two pilot sites: the Citarum River in Indonesia and the Imus River in the Philippines. For more information, Email PEMSEA ASEANO Project Manager **Thomas Bell** at **TBell@pemsea.org** or download the **Full Study** at **pemsea.org**.