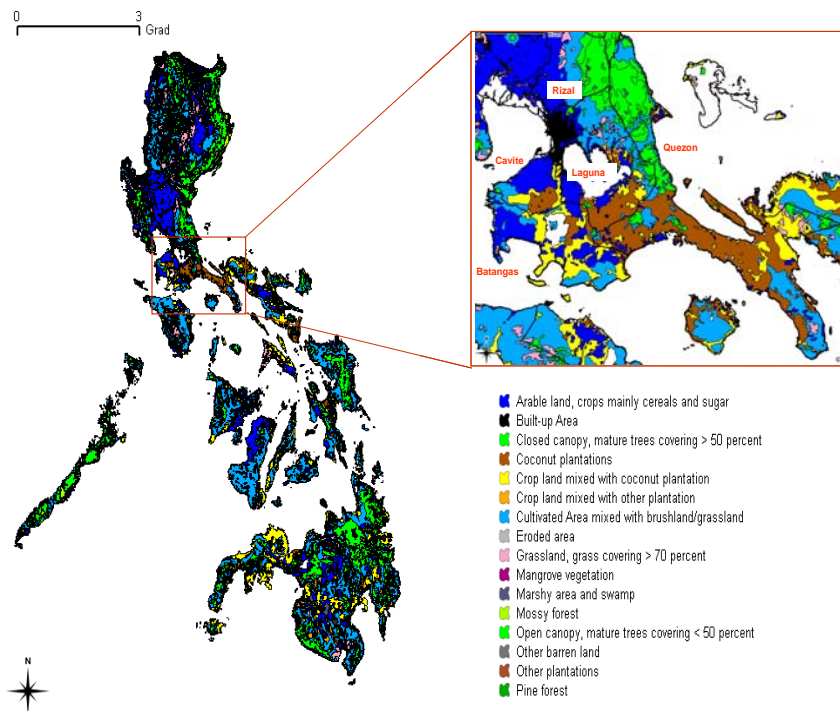


Description of case study areas for the conduct of field survey, PIC-STRAP project

Philippines

CALABARZON has a total land area of 1,622,861 hectares which comprise 5% of the Philippine Archipelago and the most populated region of the country with population of 12,609,803 (Figure 1). It has highest population with lowest GRDP, lowest employment but highest wage in agriculture, and lowest poverty. The four climate types are represented in this region. From the period 1971 - 2000 the measured average annual rainfall is 4,150.1 millimeters.

Figure 1 Case study area in the Philippines



The study sites for conducting survey in CALABARZON are in Infanta, Quezon and Batangas. Infanta, Quezon is a first class municipality in the province of Quezon, has a population of 648,181 (2010 census), situated at the northern part of Quezon province. The town has a total land area of 34,276 hectares. Half of the residents of Infanta rely on tertiary types of economic activity such as wholesale and retail, transportation, storage and communication, finance, insurance, real estate and business service, community, social and personal services. The other half earns through primary and secondary types of livelihood. Twenty-eight percent of the residents are still practicing agriculture, hunting and forestry and fishing, while 22% have ventured into mining and quarrying, manufacturing, electricity, gas and water and construction. Batangas is a first class province located on the southwestern part of Luzon with a total land area of 316,581 hectares and have a population of 2,377,395. Batangas is a combination of plains and mountains, as well as the world's smallest volcano, Mt. Taal, with an elevation of 600 meters, located in the middle of the Taal Lake. Other well-known peaks are Mt. Makulot with an elevation of 830 m, Mt. Talamitan with 700 m, Mt. Pico de Loro with 664 m, Mt. Batulao with 811 m, Mt. Manabo with 830 m, and Mt. Daguldol with 672 m. Batangas also has many islands, including Tingloy, Verde Island (Isla Verde), Fortune Island of Nasugbu. The Municipality of Nasugbu is the home of the plantation of Central Azucarera Don Pedro, the Philippines' largest producer of sugar and

other sugarcane products. Batangueños are indeed fond of drinking. This is of no surprise since it lies in what is called the coconut belt that is the raw material for the local liqueurs, the “lambanog” with 90% proof alcohol and the “tuba” which is made of 5.68% alcohol and 13% sugar.

Photos of the nipa (bioenergy feedstock) plantation and conduct of field survey in Quezon



India

Tamil Nadu (Southern India) is one of the earliest states to have promoted biofuel promotion in India (Figure 2). The state started promotion of *jatropha* cultivation way back in 2002, ahead of the launch of National Biofuel Mission in 2003. The state also established a Centre of Excellence in Biofuels at the Tamil Nadu Agricultural University in Coimbatore to promote research and dissemination. Tamil Nadu was the third largest cultivator of *jatropha* in India in 2008 with more than 20000 ha cultivated under this crop. Over the period 2007-2012, the Tamil Nadu government aimed to bring 100000 ha under *jatropha* cultivation, with the government selling the seedlings to farmers with a 50 percent subsidy. The government aimed to promote *jatropha* cultivation mainly through contract farming with Agriculture Department serving as the nodal agency in charge of implementing the program and TNAU developing the seed technology and administering the seedling subsidy. The government support was also provided in the form of subsidised buy-back of seed and free seedlings; credit from agricultural co-operative banks to reduce the financial investment risk to farmers, and standardized technical assistance to the farmers. Despite substantial drop in the cultivation of the crop in the recent years, the government policies remain in place for the promotion of *jatropha*.

The basic model for *jatropha* cultivation has been similar across both public-private and private initiatives. In either case the cultivation is done in contract farming mode with the farmer leasing out his/her land for *jatropha* cultivation (since the cultivation requires 3-4 years to provide yields) and subsequently selling the *jatropha* seeds to the contracted company. The farmer is assured a fixed annual income till the crop starts giving yield. Oil extraction is done at one of oil extraction units (over 10 units exist in the state) and supplied to either national or international market.

During the field survey farmers associated with *jatropha* cultivation in the districts of Kancheepuram, Coimbatore, Thiruvannamalai, Villupuram, Tirunelveli, and Viruthunagar have been surveyed to learn about their perceptions and experiences with regard to biofuels. The photos show that in one of the *jatropha* plantations the plants survived only on the side towards the residential area of the plot due to seepage of water given to the coconut trees (seen in the background of first photo). Lack of adequate water is a major factor for poor yield of the plants. Barring a few plants (second photo), most plants in the plot reflect stunted

growth with few leaves. Again inadequate water is considered as a major factor for likely poor yield from the crop.

Figure 2 Location of case study area in India



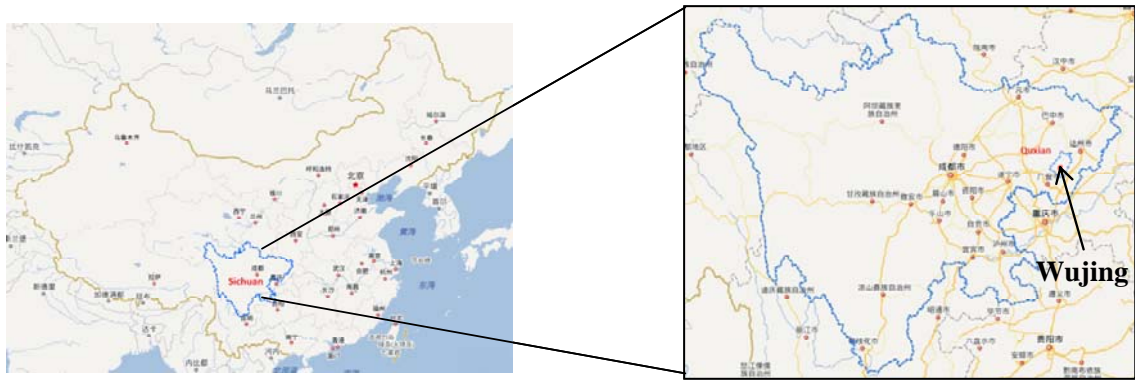
Photos of jatropha cultivation of respondents at Kudankulam, Tirunelveli District



China

Qu County was chosen as the case study to do offline survey with local farmers. Qu County is located at southwest of Dazhou City in Sichuan (See Figure 1). Qu County occupies about 2000 km² including more than 60 villages with 1.48 million residents. It is an important county in Sichuan with its agricultural products, e.g. woven bamboo wares, yellow daylily. However, Qu county is still a least developing area in China. A lot of residents turn to big cities like Beijing or Shanghai for a better income.

Figure 3 Location of case study area in China



The survey site is taken in the village Wujing (in Chinese it means five wells) at the east of QU County. Recent years, a number of biogas pools have been constructed in Wujing, which uses feces or crop residues to provide electricity or cooking fuel. However, the efficiency of these pools needs further improvement for higher benefit.

Photos of Wujing village where field survey was conducted

