

Climate and agriculture of Central Luzon in the Philippines

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1. Climate of Central Luzon

Central Luzon has the largest plain in the Philippines, and is called as the Philippine rice bowl. While the region is classified in tropical monsoon climate as whole, seasonal marches of rainfall, which including onset, peak, and withdrawal of rainy season, differ between the western and the eastern part. According to a climatic division defined by PAGASA, the western and eastern parts of central Luzon were classified into Type I and Type II, respectively. The former climate division has a distinct rainy season from May to October, and the latter experiences the maximum rainfall from November to January. These regional differences are caused both by seasonal shifts of the Asian monsoons and the orographic effect because the Zambales Mountains and the Sierra Madre Mountains run from north to south in the western and eastern part of the region, respectively. The southwesterly wind in northern summer brings the maximum rainfalls around the southwestern slope of the Zambales Mountains in northern summer, while the northeasterly wind in northern winter bring the increase of rainfall amounts around the eastern slope of the Sierra Madre Mountains. Although the highest rainfall appears in the central Luzon Plain during northern summer, the rainfall amounts are relatively low because the region is surrounded by the mountains, and is located in the leeward of the Zambales Mountains.

2. Regional agricultures under the natural environment and their issues

In the rainy season, the paddy-rice cultivation is widely performed on the Central Luzon plain, except for the swamp to the south of Mt. Arayat and for the alluvial fan to the east of Zambales Mountains. Sugarcane, cassava and some vegetables are planted in the alluvial fan. In the dry season from November to April, it is possible to perform the irrigated paddy-rice cultivation, because of the small amount of rainwater. On the other hand, the swamp, where flooding water covers in the rainy season, turns the available area to cultivate. The irrigation canals are mainly installed in the eastern part of the Central Luzon plain, and the well and small impounding reservoir are commonly used in the alluvial fan and the hilly area in the northern part of plain. Though the areas with these facilities are possible to raise two crops a year, in particular, the agricultural land used with the small impounding reservoir is easily affected by the interannual variation of rainfall amount and often experiences one cropping. The variation of rainfall amount is the main factor to have an influence on the paddy-rice cultivation. Since the El Nino and La Nina phenomena bring the tendency of drought and flood condition to this area, the measures are taken according to the occurrences of these phenomena. When the occurrence of the El Nino event is predicted, the usage plans of irrigation facilities are worked out for the drought condition even in the rainy season. Adversely the countermeasures to floods are adopted in the case of the La Nina event.

3. Conversion of rice field

Though paddy rice is the main crop of Central Luzon, the cultivation area decrease by nearly 20% from 1991 to 2002. As the total of regional harvest shows an upward trend and the harvested area does not change in the late years, the improvement of productivity is considered to compensate the

decrease of farmland. The decrease of rice field is possible to explained as the increasing conversion to the residential and commercial area with growing city area, however the conversion to the other agricultural land and fish pound is also planned positively. The scenery in Nueva Ecija often shows that mango trees are put on in rice fields, and a lot of fish pounds for tilapia can be seen in Pampanga. Such conversions of rice fields not only support the overseas and domestic demands, but are also caused by several factors including the influence of natural disaster, the issue of irrigation facility and so on.

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