

Agriculture and Food Security in Upper Pulangi

“The first thing to recognize about hunger is that today it is a rural phenomenon, it is mainly in Third World countries and it is mainly among communities that are actually agriculture communities. So why are people who are growing food going hungry themselves? They are going hungry because everything they have grown has to be sold in order to pay for the costly seeds and the costly chemicals. A high cost chemical intensive agriculture is a recipe for hunger.”

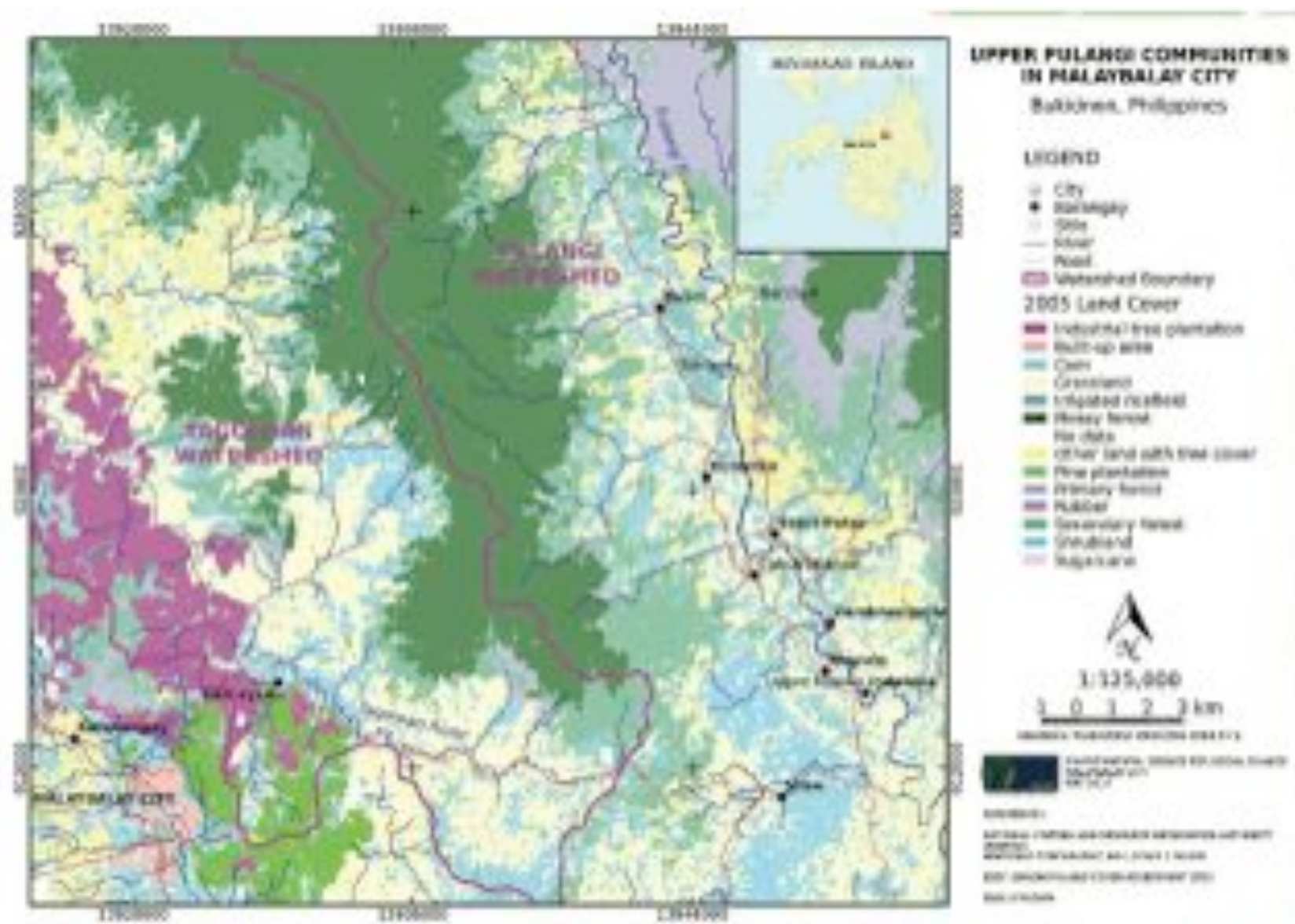
- Vandana Shiva, 2009

Global Context

- MDGs set the goal of halving the proportion of people who suffer from hunger
- The intensification of agricultural biotechnology is being promoted as a strategy for achieving food security
 - Breeding techniques
 - Tissue culture
 - Cultivation practices
 - These are widely accepted and practiced.

GMOs

- The use of GMO crops is more contentious
- Key issues
 - Questions still on human safety
 - Animal and environmental well-being
 - Efficacy
 - Socio-economic impact
 - Intellectual Property Rights frameworks: concentrate ownership of agricultural resources in the hands of a few
 - Patents drive up costs; restrict experimentation by farmers, which may lead to undermining of local practices: seed saving and exchange



Bukidnon as the Regional Food Basket of Northern Mindanao

- The province of Bukidnon plays a significant role in terms of agriculture development in the Philippines
 - Bukidnon has a population of 1.3 million, primarily rural inhabitants, who are primarily dependent on agriculture for their livelihoods
 - It is also the 2nd top corn-producing provinces in the country and the 15th for rice

- Corn
 - Dominant crop with nearly 190,000 hectares planted
 - 90,000 hectares planted to rice
 - Other important crops are sugarcane, pineapple, banana, cassava, coconut, coffee and rubber

- Meat production

- Bukidnon is also increasingly a producer of meat, especially poultry and pork
- Bukidnon is the 3rd largest producer of chicken in the country, and the largest in Mindanao
- Bukidnon is also among the top 5 pork producing provinces, with over 430,000 heads raised
- Chicken and pig production has increased rapidly during the last two decades

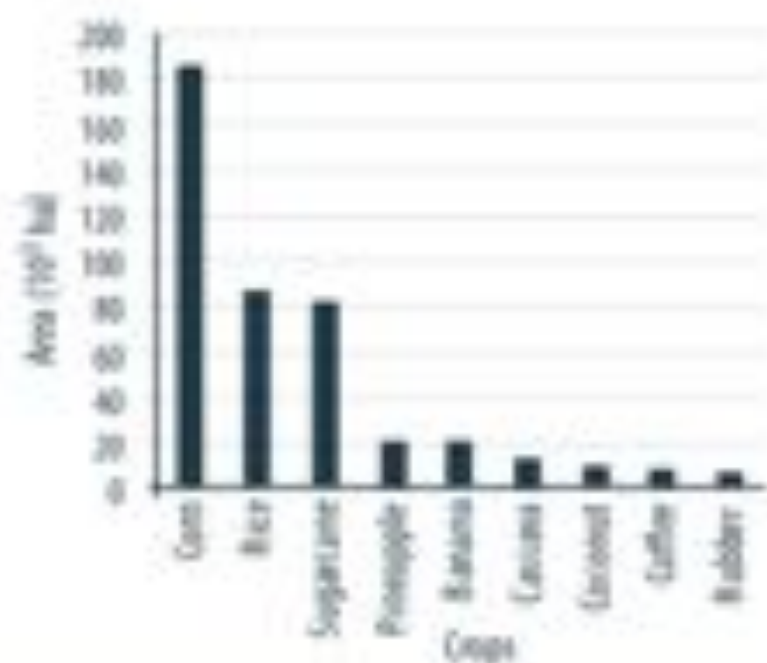


Figure 1. Bukidnon - Production Area of Key Crops
(Note: figure adapted from Lambrian (2011), data source: SAG, 2011)

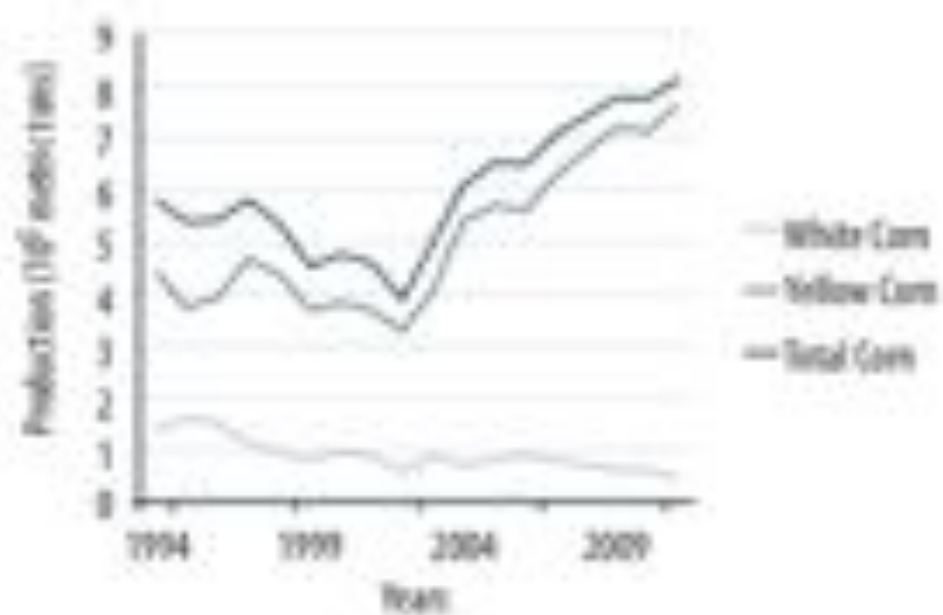


Figure 2. Bukidnon - Evolution of the area planted with corn
(Note: figure adapted from Lambrian (2011), data source: SAG, 2011)

Poverty Incidence

- Poverty incidence in Bukidnon is at 43.4% as of 2012 – indicating an increasing trend
 - 2009 – 38.8%
 - 2006 – 40.4%
- National poverty incidence during the first semester of 2012 was 27.9% - making Bukidnon one of the poorest provinces in the country
 - Poverty line is Php 5,458 monthly for a family of five

Upper Pulangi Valley

- The valley is the uppermost catchment of the Pulangi River Watershed, Mindanao's largest river system draining from north to south
- Further down the valley, the river provides water for hydropower generation and irrigation for rice fields

Status of the lands

- Most of the flat areas are either covered by private ownership or are still predominantly considered as public land
- A number of land tenure instruments have been issued in recent years:
 - 4 Certificates of Ancestral Domain Title (CADT) have been issued in recent years

Political jurisdiction and ethnicity

- The Malaybalay City part of Upper Pulangi contains 8 out of 44 barangays
- Ethnicity is categorized as Lumad and Dumagat
 - Lumad: indigenous peoples
 - Dumagat: lowland migrants, mostly from the Visayas islands of Cebu, Bohol and Negros
 - Most migrants entered the area during the logging period of the 1960s and stayed on after the moratorium was declared in the late 1980s

Population Distribution per Barangay
Upper Pulangi, Malaybalay City

BARANGAYS	POPULATION
1. Busdi	1921
2. Caburacanan	1057
3. Indalasa	1453
4. Kulaman	1064
5. Mapulo	1106
6. Silae	2099
7. St. Peter	2288
8. Zamboanguita	1532

Agricultural transformations

- The indigenous peoples have slowly adopted the lowland, intensive agricultural system, planting most of the flat areas to irrigated rice or corn
- The Dumagat (and to a lesser extent the Lumad) also cultivate rubber and coffee

Yellow and white corn

- Corn production is also slowly shifting from the local white variety to the imported yellow varieties
 - White corn refers to local/traditional corn varieties cultivated for domestic consumption
 - It requires little by way of material inputs and leftover seeds can be planted and regrown
 - Yellow corn refers to the commercial, high-yielding varieties
 - It is planted for cash income and is used primarily for use in the production of animal feeds

Yellow corn

- Yellow corn requires farmers have access to capital
 - To purchase material inputs: seeds, fertilizers and pesticides
- There are primarily two varieties of high yielding yellow corn grown in this area
 - Hybrid yellow corn
 - GMOs: Roundup Ready (Monsanto)
- Three arguments for planting yellow corn
 - Higher yields
 - Can be planted on steep, sloping areas
 - Does not necessitate intensive labor

Financial arrangements

- Farmers engaged in cultivation of high yielding yellow corn access the capital they require through either:
 - Cooperative banks
 - Individual financiers
- Cooperative banks offer loans to corn farmers, payable within 6 months. Interest rates vary from 7.6% to 8.5%
- Individual financiers apply an interest rate of 10%/month
 - Since corn takes 4 months to grow, the farmer effectively must 40% interest on their inputs at harvest time

- Although more expensive, most farmers opt to go for the individual financiers instead of banks because:
 - Banks have several documentary requirements for those who want to access the loans
 - Banks have limited the number of loans that they grant because of previous crop failures in the area, and because of the history of low payback

Arrangements with financiers

- First case: inputs are bought by the financiers and given to the farmers on loan
- The farmer plants the corn and harvests after 4 months
- Sometimes, a portion of the production can be kept by the farmer, but this is not always possible, since the financier will check that the entire harvest is brought to him and sold, in order to pay back most of the loan
- The financier also decides to whom the corn will be sold
 - Either to a buyer of corn on the cob in the nearest city, or straight to the market in Cagayan de Oro where corn is bought in grains

- The corn is transported to the market by the financier
- The financier then collects the money obtained from the sale
 - He will deduct the input costs with the 40% interest, as well as the transport costs
 - The remaining amount will be given to the farmer

Financial arrangements

- 2nd case: farmers receive financial support from the cooperative bank. With the borrowed amount, they can purchase inputs from the supplier
- At harvest, they often sell their corn in grains – meaning they assume the cost of drying and shelling, as well as transport
- The product is sold to buyers in the nearest city or in Cagayan de Oro
- The money generated is used to pay back the loan amount, plus interest, to the bank

Market conditions

- The number of input suppliers is limited, as well as the number of seed companies
 - Farmers, once engaged in planting GMO need to buy the seed again after every harvest
 - Companies can freely increase their prices; farmers become dependent on them for supply
- Price of fertilizers has increased because of the increase in transportation costs (fuel)
- There is only one buyer for corn on the cob (the only one with large post-harvest facilities)

Estimated expenses

Input	Name of the input	Unit price	Required quantity for 1 ha of land	Total cost	Cost with interest of 10%/month
Seeds	DeKalb 878	8000 PhP/bag of 18 kg	1 bag	8000 PhP	11200 PhP
Fertilizers	Urea	1320 PhP/bag of 50 kg	4 bags	5280 PhP	7392 PhP
	12-12-17	1180 PhP/bag of 50 kg	4 bags	4720 PhP	6608 PhP
Herbicides	Roundup/Sharp Shooter/ Kleen Up	350 PhP/liter	4 liters (= 1 gallon)	1400 PhP	1960 PhP
Pesticides	Larvin/Gaicho	560 PhP/100 ml	1 unit	560 PhP	784 PhP
Total				19960 PhP	27944 PhP

Table 12: Typical expenses for 1 ha of yellow corn for a farmer in Buringay-B (questionnaire date, July 2012)

Financial Situation of farmers

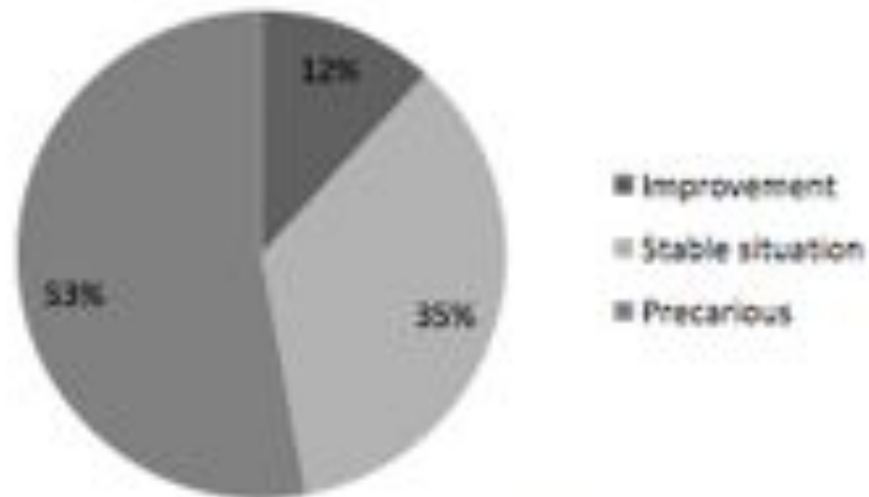


Figure 20: Proportion of current GMYC farmers according to their financial situation (questionnaires data, July-August 2012)

Other constrains to corn production

- High cost of inputs
- Rat infestations
- Decline in soil fertility, or soil acidification
- No research yet, but intensive chemical use may contaminate water sources
- Planting in steep slopes may contribute to the increased soil erosion and incidence of landslides
- Bad weather conditions
- Low market prices

A Framework for Understanding

	Inclusive Economic Development	Inclusive Social Development	Environmental Sustainability	Peace and Security
Governance and the Global Economy These are overarching concerns: what is the governance of this resource concern?				
Resource Concern	What is the situation of economic participation in this case? What are the processes or institutions that exclude or include people?	How is social development taking place in this situation? What are the social development needs and concerns that need to be addressed?	What environmental concerns are raised in this case? What further questions do you have in relation to environment and ecological sustainability?	What is the impact of the issues and concerns in this situation on peace and security?