

*Contour farming, also known as Sloping Agricultural Land Technology (SALT), is widely propagated in the Philippines.*

*The system has many advantages when compared with conventional farming. Erosion is controlled, soil fertility is enhanced, pests occur less, risks are minimized and costs for chemical fertilisers and pesticides can be saved.*

*Contour farming also provides the entry point for further intensification in livestock production or horticulture and more efficient use of external inputs. Despite all these advantages there are constraints too. The gap in income in the transition period of three to five years and the increased labour needs, especially in the first years make farmers hesitant to start with contour farming.*

*In the following two articles Jeff Palmer of Mindanao Baptist Rural Life Center (MBRLC) and R Remonde and L Villamore from the contour farmers cooperative Alayon sa Banika (ALAB) present their evaluation of contour farming paying special attention to labour aspects.*

*Although the data of the two articles are not completely comparable, both demonstrate the extra labour needs and dip in income in the first years. The conditions on the research site of MBRLC are clearly more favourable than on the demo-farm of ALAB. Eg. on the research site of MBRLC mulching with biomass obtained from hedgerows increases the production of maize per unit area considerably.*

*The farmers of ALAB need to apply extra compost to make and keep the soil fertile which is much more laborious. Participatory comparative analysis by the farmers of ALAB together with the staff of MBRLC could lead to better insight in the reasons behind the differences and could bring up opportunities for improvement of the transition strategy. (the editors)*

# Labour demand for org a

*In the mountains of Argao, a municipality at the east coast of Cebu island, Philippines, a farmers cooperative, called ALAB, has been experimenting for almost 10 years now with organic contour farming. ALAB is an acronym for Alayon sa Banika, mutual labour sharing in rural areas. An "alayon" is a fixed group of 6-7 farmers or farm workers, who assist each other on their respective farms. In this article R Remonde and L Villamore, staff members of ALAB, estimate how much extra labour is needed for organic contour farming when compared with chemical farming.*

**R. Remonde, L. Villamora  
and Erik J. Simonides**

**E**arly 1960 the Philippine government started promoting the use of chemical fertilisers in this area. By 1970 the use of chemical fertilisers was a well established practice. After fertilisers, high yielding varieties were introduced, together with the accompanying pesticides. Seminars were organised in which new techniques like monocropping and calendar spraying were explained. Farmers who adopted the complete technology could avail of loans from the Land Bank, brokered by the extension workers.

The first years everything went smooth. Farmers got bountiful harvests. But after 1980 the harvests declined rapidly and the crops became heavily infested by pests; sometimes to such an extent that no harvest was left. The technical solution was more fertilisers, more and stronger pesticides. By this time the Land Bank also became more strict on their loans, since repayment of loans did not go so smooth. Farmers found it more and more difficult to make ends meet.

After 1980 many farmers were forced to sell their land to repay their debts. Usually farmers were tilling their own land, now many of them are tenants of the land they owned previously. Well-to-do farmers and big businessmen are now the owners of the land.

## What to do?

A small group of seven farmers (alayon) started in 1983 to evaluate the situation. They came to the conclusion that the soil was extremely depleted and eroded in the past 10 years. Reasons for this were the destruction of soil life due to excessive use of chemicals, increased erosion due to bad land use practices such as monocropping and increased chemical disorder of the soil due to excessive application of

chemical fertiliser and lack of micronutrients. Especially the limestone soils proved very susceptible.

At first they decided to improve their marketing through direct deliverance to the city. This should provide them with extra cash to invest in their farms, but it soon proved to be impossible. They were unable to pass by the middleman, their crops were not of sufficient quality and they just did not have enough quantity. After this experience the alayon decided to focus on soil improvement.

## Visit to a contour farm

Through a friend the alayon was introduced to an area where contour farming already took place. Most of the farms in the exposure area used napier grass (*Pennisetum purpureum*) and Ipil-IPil for the hedgerows. The grasses and Ipil-IPil were used to feed the livestock. The dung was used as fertiliser. Some farmers also practised compost making. The alayon from Argao became convinced that this farming system would improve the soil and enhance production, with natural means.

Back in their own area the group started building their own contour demo-farm. Villagers were laughing at the group 'using backward techniques as 'A-frame'. After some months, however, when the farm developed, the people came back to admire the nice look of this new farm. Some also wanted to learn contour farming and joined the first alayon. Thus ALAB started. At present there are over 40 alayons (6 to 7 people each) working with ALAB.

What are the extra labour needs for organic contour farming when compared with chemical farming? Estimates are based on the ALAB demo-farm. We suppose one family (8 people), 1 hectare, hilly land (30 to 45 degrees) and the area is square. In reality, in this area, the average farm size is 0.5 to 0.75 ha. Usually there are 3 cropping seasons (each 3 months) and one dry season every year. The first cropping is usually maize intercropped with beans or sweet potato, the second cropping is a crop of vegetables (cash crop), not intercropped, but strip cropping and the third cropping is maize pure stand. The third cropping season usually has less rain.

## Establishing the contour farm

The first activity is land preparation. Then 29 contour lines (double hedge rows - 2,900 meter) have to be drawn with an A-frame, placing sticks on the contour lines and putting the cleared material in the line. As soon as the rain starts, hedgerows are planted: tilling, planting and hauling. The planting materials and seeds (Ipil-IPil,



no shortcutting, but harvesting strip by strip. This needs approximately 30% more time. Putting the crop residue in the contour line is additional work. In chemical farming the farmer would let animals graze the field or simply burn the crop residue. This is impossible in contour farms!

Harvesting of vegetables does not make much difference. The farmer who practises chemical farming has the advantage that he can harvest on *pakjaw* basis (fixed amount for hired labour for a fixed job). This would destroy a contour farm.

**(Dis)advantages**

Although the system of organic contour farming is now generally accepted by the farmers, only few farmers are implementing it to the full extent. The main complaint is the labour-intensiveness of establishing and maintaining the system. Farmers who implement organic contour farming are either very young - because they have no family yet, or older couples - because their children have already left the house and sustain their own living. Farmers with a family cannot afford to have a dip in their income as is the case in the transition period from chemical farming to organic farming, no matter how bright the organic future may look. The daily expenses, food, school-fees, health, etc, cannot be cut more. In our estimate (see figure 1) the dip at this moment is about 66% for the first year. Present monthly income is about P 3,000 (US\$ 120), about P 1,500 from crops and P 1,500 from livestock for a 1 ha farm. The transition period is approximately 3 to 5 years.

**Income gap during transition**

The "gap" in income for the projected transition period is approximately P 60,000 (US\$ 2,400) per farming family. The income left in the first period mainly comes from livestock activities (P 1,000/month). In the transition period, alternative income, ie. not soil related income-generating activities, has to be found. In ALAB we are experimenting with small domestic animals, intensively kept. Especially broilers and layers are promising. 250 layers will make up for the income loss. Initial

investment is high (P 25,000 or US\$ 1,000), but this money will be recovered after 40 weeks from the start. If cooperatively organised, with revolving funds, it is possible. It would however mean an additional workload for the women (or another member of the family) of about 2 hours each day. The ordinary way of augmenting the income from work outside the farm, will not be possible during the transition period, since the farmer has no spare time, especially not the first year.

**Comparable Income**

Chemical farming on a 1 ha farm, cropping pattern maize-vegetables-maize needs 266 to 232 mandays a year. The overall extra labour demand for organic contour farming ranges from 150 to 116 mandays after the first 2-3 years. On average a family can, with the same amount of labour, obtain from a 1 ha organic contour farm about the same income as a family from a 1 ha chemical farm (P 36,000 or US\$ 1,440). However, part of the income from a chemical farmer has to come from outside jobs; these jobs are not always available. An organic farmer has no time to do outside jobs. His labour is capitalized on his own farm. An organic contour farm has a higher net profit per ha mainly due to lower production costs as chemical inputs are not needed. An organic farmer saves in this way about P 25,700 yearly. Therefore there is less need to borrow money, which is rampant in chemical farming.

**Less risks**

In a well-functioning organic contour farm there are less risks involved. The soil is less susceptible to dry periods. The water retaining capacity of the soil is much better than of the soils in chemical farming and organic farms are hardly ever seriously damaged by pests. There is less chance of total crop failure. In chemical farming, often poisoning of the farmer due to pesticides occurs. This risk is absent in organic farming. And last but not least, the soil is protected from erosion!

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# Labour needs

*On the demonstration farm of the training centre of Mindanao Baptist Rural Life Center (MBRLC) long-year comparative evaluation of the Sloping Agricultural Land Technology (SALT) with local farmers' practices is being conducted. After 6 years of cropping the results are very promising: production and income increased, erosion nearly stopped and labour demands seem to be acceptable. In this article Jeff Palmer specifically focusses on labour aspects.*

**Jeff Palmer**

The SALT model grew out of problems that farmers expressed to MBRLC staff, low and declining yields being the most serious ones. In 1978, a 1 ha test site was selected at the MBRLC premises to serve as a 'testing ground' for the new technology. Just like on surrounding farms, the slope was more than 15 degrees and had been farmed for at least 5 years. Contour lines were planted with Ipil-ipil (*Leucaena leucocephala*) 4 to 6 m apart. Corn was sown in between the contour hedges. The model had worked for about 1 year before first comparisons were made. Table 1 illustrates these results.

The comparison showed that SALT requires more labour than conventional farm methods in the first year, but that the increase in yields compensates for this. Now, after another 6 years of testing (12 crops of maize) on another test site, in terms of production per unit area, SALT is consistently superior to the farmer's treatment. SALT treatment remains highly productive, whereas the production on the 'Farmer's Farm' is steadily declining. Annual net income from the SALT treatment was less than that from the farmer's treatment for the first 2 years of the test. However, the overall trend for the farmer treatment decreased, while net income from SALT increased or remained constant.

**Labour needs surprisingly low**

One of the surprising results of the test SALT study was in the area of labour inputs. It had been thought that SALT farming would be more laborious due to the establishing and maintenance of contour hedgerows. However, from figure 1 it can be seen that, although labour requirements in the first year were higher, less labour was needed in the succeeding 4

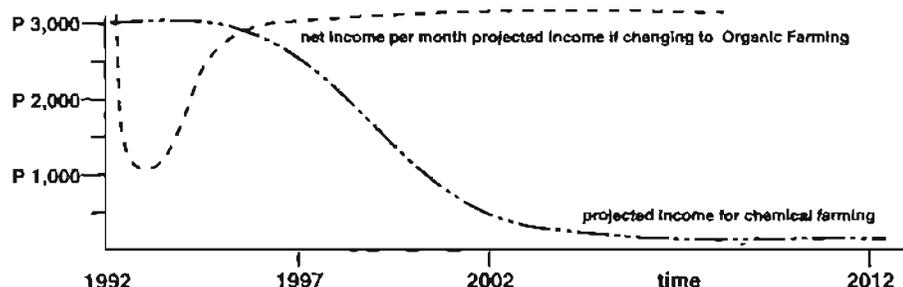


Figure 1  
Note: In 2012 it is expected that the soil in chemical farming is so depleted, that farming has to be stopped