



COVAMS



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The result of contour ridging practice in 2011 planting season

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1. Summary

The area survey for 2011 /2012 planting season was conducted and this paper is the result of the survey.

The survey result shows that 9,367 households have practiced contour ridging in the season, which rates 28% of entire households in the target area with 2,376ha of conserved gardens. The estimation of soil protected within the conserved gardens is figured out in a range of 12,426m³ to 87,729m³.

Additionally, this survey revealed that good relations between the project or extension officers and farmers would be essential to make the farmers to practice. The number of practitioners in South Kuntaja area where COVAMS training initiated in 2011 was only 681 out of 8,644 households, which counts only 7.8%. The area had very limited experiences of hosting developmental project before. They were quite skeptical if COVAMS project would really implement its activities in the area. That feeling of the farmers apparently affected to their practice.

The project decided to tolerate the distance between the ridges for 2011/2012 planting season. It used to follow 75cm of one-one planting method. However, it was revealed that farmers concerned necessity of more chemical fertilizers with the distance; compared to their conventional one of 90cm. With the tolerance, the farmers could decide the distance from the range of 90cm to 75cm in 2011 / 2012 planting season. The survey revealed that about 21% of the practiced farmers were encouraged practicing contour ridging by the tolerance of the distance.

In four consecutive year's area survey proved that the impact of the training in practicing contour ridging is the most in the first year. The increase of the rate in its practice in 2011 / 2012 planting season was only 8% of 169 villages from the previous year. However, there was a salient increase in the dimension of the area conserved per household in 2011 / 2012 planting season. It was estimated 0.26ha per households. This could be an indication of recognition of positive impact of contour ridging in the maize yield by the farmers. It is expected that the practice of 36% of entire household with 0.26ha in 169 villages will intrigue the non-practicing farmers' interest more. Hence it can be expected that the number of practicing farmers will increase steadily if not accelerated.

2. Survey method

The project employed a method for the area survey of contour ridging practice with conversion from quantity of maize seeds used. The timing of the survey was set in December 2011 to January 2012 so that the memory of the farmers on the quantity of the maize seeds used would still be fresh and somehow accurate. The data are supposed to be collected from all the practicing farmers through hearing in 2011.

There was an advice from CCOs that there will be some differences on the area by different planting method and variety of maize. Therefore the design of the survey sheet captured the following information:

- ① Variety of seed
- ② Quantity of seed
- ③ Number of seeds per station
- ④ Distance between planting stations
- ⑤ Distance between the planting ridges

(Refer to the attached conserved area survey form in 2011)

The Exercise was done by LFs of respective villages paying K20 per practicing farmer. With this method, there could be some cases that LFs list more than reality in order to get more money. A coping strategy was discussed between the CCOs and the management but there was no effective solution except telling the LFs this principle “Whole or nothing”. It means, if LFs included false information of practicing farmer, they will not receive any remuneration. Hence they were to be told that CCOs were going to verify the report after submission of the survey sheet.

The data were collected through the LFs according to the survey sheet but it was too complicated to figure out the difference of the area by different distances between the stations, ridges and the number of seeds. Therefore the project applied a conversion rate of 20kg / ha to all the cases, assuming this is for one-one planting method with 75 cm distance between ridges. In this case, the conserved area would be minimal compared to other planting distances and number of seeds.

3. The result of survey

3.1 Number of practiced farmers

The number of practiced farmers with 223 villages was aggregated to 8,757 households from the two TAs of Kapeni and Kuntaja. The number of practiced farmers in each TA

was of 4,664 and 4,138 for TA Kapeni and TA Kuntaja respectively in 2011 planting season. The remaining 21 villages did not submit the survey sheet.

A tendency was observed that the number of practiced farmers in many villages of 2008 to 2010 increased significantly. Hence it will be more accurate to add some more numbers of the villages which did not submit the survey sheet to the result. Besides, some LFs of about 15 villages apparently did not cover all the practiced farmers since their submitted survey results showed quite significant decrease compared to the previous year's results. It is difficult to think that the provided training in 2011 exacerbated the practicing rate when the above mentioned tendency is considered. So it will be fair, at least, to adjust the number with the previous year's result. The villages which did not submit the survey sheet counted 380 farmers in the previous year and the villages which submitted but probably not covered all the practiced farmers counted about 230 farmers as the table below shows. After taking them into account, the total number of the practiced farmer in 2011 aggregated to 9,367.

Table 1: Number of practitioners of contour ridging

Collected data	No submission (21villages)	Adjustment of not fully covered (15 villages)	Total
8,757	380	230	9,367

The above adjustment may give more realistic picture on the number of practiced farmers in 2011. The rate of practiced farmers against the entire household number¹ in the target area is hence around 28%.

Meanwhile, it was observed that very few farmers of the 2011 villages in TA Kuntaja practiced. It was 47 villages with 8,644 households that the project started the training in the area in 2011. Through the project experiences, it was expected to have about 25% to 30% of practiced farmers against the total number of households in the first year of the intervention. The result of TA Kapeni supports the expectation with 1,300 households of practiced farmers, which counts about 28.7% to the entire number (4,538) of households of 2011 villages. However, the rate of practiced farmers in Kuntaja of 2011 villages was only 7.8% with 681 households against 8,644 of entire households.

¹ The total number of household in the two TAs was then 33,580.

3.2 Area conserved with contour ridging

The total area conserved in 2011 is estimated 2,215ha with 8,757 households. With the same adjustment as above stated, the estimation will be 2,376ha with 9,367 households. The average of area conserved per household is estimated 0.25ha.

The villages of 2011 in TA Kapeni gave quite impressive result in the area conserved if the result is truly reflecting the reality on the ground. It was only the first year; nonetheless, the farmers achieved 0.26ha as an average of a household whilst the average of the 169 villages has reached 0.26 after three to two years intervention. On the other hand, the villages of 2011 in TA Kuntaja achieved 0.12ha as an average.

Table 2: Area conserved with contour ridging by TA

TA		Collected data	No submission	Adjustment	Total
TA Kapeni	No. of people	4,626	300	130	5,056
	Area conserved	1,316ha	85.3ha	36.9ha	1,438ha
TA Kuntaja	No. of people	4,131	80	100	4,311
	Area conserved	899ha	17.4ha	21.7ha	938ha

Note: The area of No submission and Adjustment was figured out by applying the average of area conserved per household of respective TAs. They are 0.284 and 0.217 for Kapeni and Kuntaja respectively.

4. Observations on the salient results

4.1 Small impact of training in the practice for the Kuntaja 2011 villages

The number of practicing farmers in Kuntaja of 2011 villages (so called Kuntaja South) was only 681 households which count only 7.8% against their total households of 8,644. This is startling result. Normally the project expects and experienced at least around 25% in the first year intervention. How come did such small number of people of the area practice? The following is an analysis on this result.

The consequence could be attributed to complex situations such as delayed implementation of the training, inadequate monitoring by CCO, limited experience in developmental project by the villagers, and numerous non farmers.

➤ The delayed implementation of the training

The farmers in the area had started the land preparation for maize earlier than other areas, hence so many farmers felt not to repeat the preparation by the time the LFs started to conduct the training, although quite lots of them participated in the training. This might be affected by the delay of conducting TOT for the LFs by CCOs. The TOT should have been done in May but it was done in June. The reason of the delay was simple that CCOs could not cope with the time frame, especially in conducting sensitization meeting. Each CCO had to take care of 10 villages in average and sensitization meeting needs to be implemented for each one of them. The implementation took more time than what CCOs thought because of circumstances in the villages.

Having traditional ceremony also contributed to the delay of execution of training. In general, from June to August, the villagers are busy with the ceremony. It seemed that LFs had a difficulty to coordinate the execution of training during the ceremony season.

➤ Inadequate monitoring by CCOs

One CCO in Kuntaja South was allocated to 30 villages to monitor and give technical support to LFs. The CCO had an experience to have 45 villages at a time previously but it was only for soil erosion control training that time. So the project thought that it would be possible to monitor such number of villages. However, the area is mountainous and road network is not easy to go around the villages, moreover, fuel shortage affected to his monitoring activity.

➤ Limited experience in developmental project by the villagers

Kuntaja South, according to the Malawian officers of the project, had ever got very few chances to have developmental project previously. The project thought that their less experience in developmental project would work positively. However, it did not work that way.

During the sensitization meeting which conducted in April to May. CCOs explained what COVAMS project would do and expected that the villagers would understand that the benefit was only knowledge through technical training. Despite such effort by CCOs, the villagers were probably still skeptical if really the project would implement the activities as they were told. This attitude can be attributed to their experience that

NGOs had come sometime for surveying purpose but after the survey is done, they ended up with no implementation of project and even no feedback was given to them. Such experience was commented during the sensitization meeting.

➤ Numerous non farmers

Some of the villages are contiguous to Blantyre city. Moreover, the population of those villages is quite huge and great portion of the population seems not to be farmers. This affected to the practicing rate while the project had no information of who are non farmers.

All the reasons except the last one seem to be caused by lack of trust between the villagers and CCOs or the project itself. SVTA is designed to quick expansion of area but the project has got a lesson that nurturing of trust between the villagers and the project is essential to achieve an adequate result. There is no provision of preliminary period for that purpose hence presence of CCOs in the training venues during the activity period must be secured. It means that the project should stress that monitoring activity is not only for the monitoring sake but it works to nurture the trust and eventually encourages the villagers to practice.

4.2 Adjustment of ridge and planting distance

The tolerance in distance between ridges and planting stations made farmers motivated to practice contour ridging. The rate of farmers who used the distance between the ridges and planting stations were 21% and 47% respectively of the 8,757 practiced farmers.

The project had followed the distances recommended by Agriculture Department till 2010 / 2011 planting season, which were 75cm and 25cm for between the ridges and planting stations respectively. This method called one-one planting. However, the project found out that it was one of the reasons which farmers didn't want to practice contour ridging. Their concern was 75cm ridges distance would force them to make more ridges in a unit of land, and that requires more chemical fertilizers. While it was difficult to procure enough chemical fertilizers, they didn't want to follow the distance, especially of the distance between the ridges.

Upon knowing their concern, the project decided to tolerate the distances for 2011 / 2012 planting season. Since traditional distance between the ridges is 90cm, the project

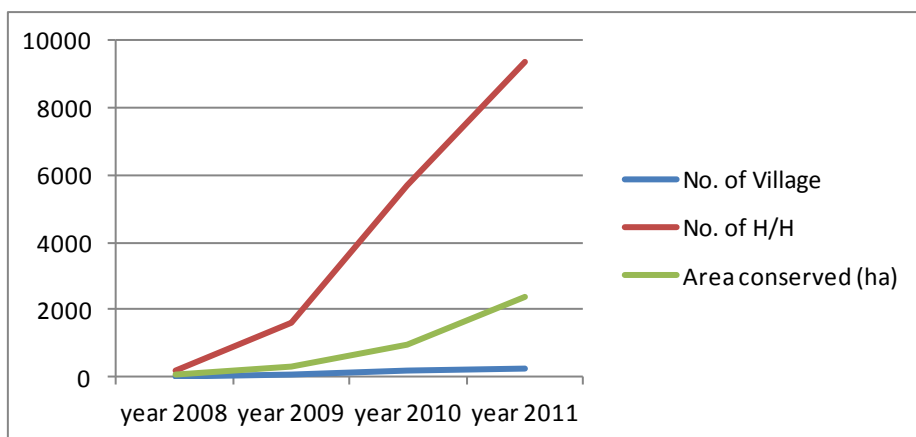
suggested to the farmers that it can be between 75cm to 90cm. This tolerance, the project hoped, would be entry point to farmers to know the benefit of contour ridging and also it would increase the number of practitioners.

As a result, 604 and 1,237 farmers in TA Kapeni and TA Kuntaja respectively were attracted to practice by the idea in distance between ridges. The total was 1,841 farmers which counts 21% of entire practiced farmers of collected data. Meanwhile, the farmers who used their own way in distance between the planting stations were 2,219 and 1,904 in TA Kapeni and TA Kuntaja respectively. The total of 4,123 counts 47%.

4.3 4 years result and the future expectation

The graph 1 shows that there is a tendency that the villagers who practice contour ridging are aware now of the effectiveness of conserving their gardens in maize yields. Besides, the awareness of the increasing yields of maize is apparently spreading steadily to other non practicing farmers.

Graph1 Tendency of increase in number of practitioners and area conserved



The approach which COVAMS project has been applying is to provide training to the villagers without any provision of incentives for them to practice, although there was some difference in the approach between 2008 and the rests. The project applied Integrated Village Training Approach (IVTA) in 2008 and Specified Village Training Approach (SVTA) from the 2009 to date. It appears when we look at the average of conserved area per household that IVTA worked better to convince farmers to practice contour ridging than SVTA. This also supports that the relationship between the project or extension officers and the farmers is quite essential for the dissemination of technology. However, it appears that SVTA has a potential to reach the same effect as

IVTA's though it takes more time.

The table 3 below shows that the average area conserved was dropped from 0.24 to 0.18 which counts 75% of the previous year in the year the project sifted to SVTA (year 2009). This tendency continued for two years but in the third year, it was recovered. This was probably not only because of establishment of good relationship but also or rather the farmers' experience of increased maize yields with the practice of conservation technologies. They are now confident of better yields for two years experiences and that triggered for them to expand the area to conserve. As a result, the total area conserved in 2011 was increased at the rate of 250% comparing to the previous year, while the increase of the practitioners was at the rate of 164%.

Table 3: 4 years result in practicing contour ridging

Year	No. of Village	No. of Households	No. of practitioner	Area conserved (ha)	Average/h/h (ha)
year 2008	7	543	207	50	0.24
year 2009	50	4965	1629	300	0.18
year 2010	169	20377	5700	950	0.17
year 2011	244	33580	9367	2376	0.25

The table 4 shows that it was the first time in four years that the increase rate of area conserved in 2011 was exceeded the rates of other increase in target households and number of practitioners. This supports that acceleration of practicing has been triggered.

Table 4: Increasing rate in households, practitioners and area conserved

Year	Increasing rate		
	Households	Practitioners	Area conserved
2009	910%	790%	600%
2010	410%	350%	310%
2011	160%	160%	250%

The salient difference in the year 2011 become clearer when we look at the result of 169 villages of the year closely (refer to table 5). The farmers who started the practice of conservation technologies in 2011 were 1,729, which count 130% of increase rate. On the other hand, the rate of increased area conserved was 205% with about 1000ha. This asymmetry means that those who practiced in the previous year expanded their

gardens with contour ridging. The rate of increased area by the experienced farmers could be more than 150% because farmers who just started to practice the contour ridging would not reach to 0.26ha normally.

Table 5: The increase rate of 169 villages

Year	No. of Village	No. of practitioner	Area Conserved (ha)	Average/h/h (ha)
year 2010	169	5700	950	0.17
year 2011	169	7429	1947	0.26

At the same time, 130% of increasing practitioners of the same villages gives a hope that the number of practicing farmers would have been reached to a significant number to encourage the non practice farmers to practice contour ridging apart from awareness of positive impact to the maize yields.

5. Impact of the conservation activity

The measurement of eroded soil at the project demonstration plots in Chiwalo and Chuma village was done in May 2012. The estimation of protected soil in the conserved gardens with contour ridging, box ridges, and swale in 2011 / 2012 planting season would be in a range of 12,426m³ to 87,729m³.

The rain falls in those two areas were shown table 6 below.

Table 6: Rainfalls in 2011/ 2012 planting season

Month	Chiwalo		Chuma	
	Days	Quantity	Days	Quantity
Oct. 2011	4	31	5	38
Nov. 2011	5	58	8	68
Dec. 2011	8	126	8	130
Jan. 2012	14	321	18	362
Feb. 2012	9	139	10	132
Mar. 2012	10	171	10	185
Apr. 2012	2	37	2	46

Days which went beyond 50mm were once or twice for both demo-plots, and the month which had more than 50mm were December, January and March for Chuma, while for Chiwalo they were December, January, February and March.

The table 7 shows the result of erosion measurements at the project demonstration plot

in 2011 / 2012 planting season. The difference shows the quantity of soil which remained in the gardens.

Table 7: Result of soil erosion at the project demonstration plots

Demo plot	Type	Actual measurement	Conversion to ha	The difference
Chiwalo	Control	0.892m ³	17.846m ³	5.230m ³
	Conserved	0.630m ³	12.615m ³	
Chuma	Control	4.030m ³	80.615m ³	36.923m ³
	Conserved	2.184m ³	43.692m ³	

Note: the area of each type is 500m².

The erosion rate of conserved garden at Chiwalo could be less from its garden in actual base because the amount of the soil eroded to the catching canal was mostly from the wall of the canal. It can be concluded so because very little of breakage of the ridges in the garden was observed, which means that no much movement of the soil toward the canal. This means that the range of protected soil in the conserved gardens in 2011 / 2012 planting season will be smaller.

The demonstration plot of Chuma has got different problem last season. Because of erratic rain falls, the germination rate of planted maize was very poor in the gardens. So the situation of the gardens was like bare land. So the erosion rate figures became bigger.

