Slash and Mulch Sustainable Agriculture

The Search for Alternative to Shifting Cultivation

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DISCLAIMER

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CHIN STATE AND CHALLENGES OF AGRICULTURAL INTENSIFICATION IN REMOTE UPLAND AREAS

Highlights: (Characteristic and Challenges of Chin State Agricultural Economy)

- Limited availability of land Suitable for permanent Agriculture, particularly irrigated production due to topography,
- Limited possibilities of intensive pasture production constraining the potential to own cattle to the carrying capacity of fallow and forest areas, and incentivizing seasonal burning of forest regrowth;
- High cost of transportation to distant markets, further limiting cash crop possibilities;
- Increasing emigration (both seasonal and permanent), linked to limited education, employment and income generation opportunities, greatly reducing labour availability, while at the same time providing much needed remittances for livelihoods security; agricultural activities increasingly relying on elderly and youngest household members;
- Population concentration along the communication networks increasing the cost of cultivating distant areas, provoking an increased pressure on limited agricultural lands closer to settlements;
- Tendency to create crowded settlements for access to limited services, with reduced scope for intensive home garden production around the houses.

In the midst of its complexity and challenges in the agricultural world, Chin State is significantly moving toward these accelerating trends which have been radically producing a rapid transformation of traditionalized System of Chin Agriculture. This system is characterized by the following processes;

- Intensification of traditional slash and burn agriculture: the traditional system of allocation of slash and burn areas ("lopil") by village authorities survives, but given the concentration of habitat near the roads villagers are less and less willing to travel long distance to their fields, so that the lopil areas are closer to villages and being used with accelerated rotations. Forest regrowth has changed to a type of bush-fallowing rotation, and even closer to villages, cultivation of sloping areas may be almost permanent. Degradation of fallow vegetation and impoverishment of soils are the consequence. Plots are often not even slashed, the dry vegetation being directly burnt. The variety of crops is also being drastically reduced, affecting the diet diversity.
- Development of paddy terraces and intensive vegetable production close to settlements: rice terraces were initially introduced by government through projects assuming the heavy investments. They are increasing rapidly in areas where it is feasible, generally on slopes just beneath villages or nearby. They respond to a rapid change of traditional diet from maize to rice. In most cases only the better off households can afford to establish and maintain rice terraces.
- Modification of traditional livestock production: the changes in lopil systems and the development of rice terraces, together with the overcrowding of settlements along the

roads, have profoundly affected the way Chin people practise livestock raising. The mython or domesticated gaur is still a social prestige type of cattle, but it is becoming increasingly difficult to maintain them stabled in villages because of lack of fodder. They are also replaced by water buffaloes which can be used for ploughing rice fields. Cattle rearing is done mostly in forest areas whole year round now. Only small livestock that can be fed on crop residues etc can be maintained in the village. Herds seem to have increased and with the year round free ranging, forest fires to stimulate regrowth have also increased.

- Vegetable as key cash crops: vegetable production has become the key cash crop for many households, including those without access to rice terraces. Onion, garlic, cauliflower and cabbages are the main crops. Plots are situated near the village; access to water determines the capacity to have more than one crop a year.
- Increasing importance of perennials cash crops: several perennial crops present multiple advantages to fit into the evolutionary trends of upland agricultural systems: they may be produced in small areas close to settlements, often in agroforestry combination with other types of production; after establishment, they require limited labour with the exception of some peak activities like pruning and harvesting; the products are not bulky, easy to transport and with good value per weight compared with many agricultural products; they may be transformed for added value. These crops are particularly convenient for households managed by ageing members. The most interesting examples in Chin are grape, tree bean or Zowngtra (*Parkia speciosa* and related species), coffee, apple, avocado, papaya.

Therefore, it is radically seen that the traditional formerly shifting agriculture system is well engaged in a process of involution, with diminishing returns to labour causing a spiral of disinvestment and more diminished returns, Chin Households are moving towards a cash oriented economy based on vegetables and perennials, while rice is becoming the key staple crop as in the rest of Myanmar. The development of irrigation and concentration of settlements is creating an increasing pressure on water resources. CORAD intervention is largely accompanying these trends.

THE PROJECT INFORMATION

CORAD is the local/National NGO, currently working for 110 villages in Northern Part of Chin State with its main purpose of improving their livelihoods and food security through a significant program as to promoting the diversification of agricultural and economic integration with the officially mandated period of 2016 to 2019 December in the framework of cost extension in the mandate of LIFT, DONORS.

In its primary objective, the project is to significantly contribute to the substantial alleviation of poverty and food security through the mandate program of agricultural intensification and diversification, increase of productive resources and improved management of the natural resources in the Northern Chin State of Myanmar.

CORAD (Local NGO) and Gret will be working in partnership for achieving the following objectives:

- Access to technical knowledge to improve productivity and diversify agriculture

- Improve access to natural resources to increase food production, income generation and permanent farming

CORAD has its five components in order to program overall project implementation throughout the year in the realistic estimation of proficiency and sustainability as mentioned below;

Table 1: Project Component and Its Brief description

Name of Component	Brief Description
Project Outcome 1	Farmers Group members increase production of rice and vegetables
Project Outcome 2	Producer Groups members increase their income from group marketing of selected cash crops.
Project Outcome 3	Households improve their diet through adoption of nutrition practices and consumption of nutrient rich foods.
Project Outcome 4	Households have improved equitable access and sustainable use of key natural resources in selected watersheds.
Project Outcome 5	CSO, NOG, Local Government and other stakeholders contribute to effective policy dialogue.

CORAD intends to promote the diversification& intensification of the small scale farmers' production in order to improve food security and to set up with new economic opportunities. Producers Groups will also be strengthened ensuring a better economic integration by improving the access to technical & economic services along with the value chains. Apart from the strengthening the technical and economic capacities of the targeted groups, CORAD and Gret will also supports the communities, giving more specific concern on women in order to improve their land and manage their natural resources better.

Methodology and Approach:

The Evidence Based Documentation used triangulated information from several sources:

1. Review of existing LIFT and project documentation such as project proposal, the annual and semi-annual reports, research reports and studies, FMO's field visit reports and other relevant project documents and LIFT Mid-Term Evaluation Reports 2018 (see bibliography)
2. Field visit, focus group discussion, individual interview and individual testimony
    - The Report of mission, visiting in 4 townships 8 villages and attended to 1 CLTSW (12 co-associate farmers)
    - Total number of participants amounted to 220 FG members, including 114 woman and 106 man
    - Individual in depth interview were conducted with 10 co- associate farmers Individual testimony were conducted in average with at least 5 farmers adopters per village; 40 adopters.
3. Technical Data Analysis:
    - The report of mission, acceding all technical data sheets in advance and updated versions- 5 townships.

- The Report of mission, reviewing data, extracted tendency and observation and asked for confirmation when needed.

THE BACKGROUND OF THE THEME: SLASH AND MULCH

The Northern Chin State is a mountainous area located in the Western part of Myanmar, close to the Indian border, and inhabited by the Chin ethnic minority. And it is representative of upland agriculture systems based on rotational fallow letting time to soil fertility regeneration. Shifting cultivation is an integral part of Chin farming and livelihood system, providing essential subsistence crops. In the past long fallow have ensure the sustainability of the practice. The main crops cultivated on shifting fields are corn, millet, pea, beans. Over the last twenty years, most of the villages have faced a significant shortening of the fallow period on rotating fallow fields, from 15 years to 6-9 years. Nowadays, the shortening of the rotational period to a few years has brought many issues such as loss of soil fertility, decreasing yield, soil erosion, land slide, stress on water resources, etc.

The project has explored alternative by experimenting slash and mulch system on minute plots with the objective to minimize stress on finite natural resources without trading off crops productivity from 2017 in project area (Falam, Tedim, Hakha and Tonzang townships).

The Slash and Mulch technology is directly contributing to the project outcome 1 as to Farmers Group members increase production of rice and vegetables and Immediate Outcome 1 Farmers adopt improved cultivation practices promoted through extension activities.The vegetable production will be increased by the significant adoption of this agricultural technique in the targeted area of 5 Townships, covering 110 villages. This project outcome 1 will be measured by doing the Endline[1] Study in a comparative analysis with the baseline information which was done in the beginning of the project. The baseline information on this outcome is seen as;

Outcome/Output	*Indicator*	*Baseline results*
P.O.1 Farmers increase production of rice and vegetables	*% of farmers achieving increase in their production*	*Indicator (% increase): **0%**** *Average annual sales of paddy/rice/sticky rice: **20.42 viss*** *Average annual sales of top five vegetables: **435.12 bunches***
	Average % increase in rice and vegetable production	*Indicator (% increase): **0%**** *Average annual sales of paddy/rice/sticky rice: **20.42 viss*** *Average annual sales of top five vegetables: **435.12 bunches***
I.O.1 Farmers adopt improved cultivation practices promoted through extension activities	*% of participating farmers adopting a basic set of improved practices (to be defined per crop)*	*% adopting at least three improved practices for paddy/rice/sticky rice: **25.84%***

[1] *The 'End-line Study' will be conducted by the external consultancy team under the management of CORAD in the month of August and September 2019 in its realistic estimation.*

Reflecting this baseline information, CORAD is implementing the agriculture Extension Program in which the 'Slash and Mulch Agriculture Practice' will significantly improve the increase of vegetables/crops against the set-up indicator in the M&E framework until December 2019 as a whole.

THE SLASH AND MULCH AGRICULTURE OR SLASH AND BURN AGRICULTURE?

The 'Shifting cultivation' was once a sustainable technique when long rotation were practiced allowing forest cover re- growth. Nowadays, the short rotations on those fields have brought a lot of problems such as:

- Declining soil fertility and crop yield
- Soil erosion and land slide
- Loss of productive assets
- Negative impact on water recharge and shortening fresh water access period.

In 2017, CORAD initiated experimentation on Slash & Mulch as an alternative to Slash & Burn traditional method and it has delivered a sustainable path way :

- Women in particular find the technique easy to apply and to understand, less work load and less risky, no firing and risk associated when individual firing
- All engaged farmers understood positive impact on soil fertility and most reported higher yield, taller plants, larger cobs, and heavier grain harvest
- As per the results, the first year of application of this technique, the farmers could observe a lower yield or slightly higher but after repeating the application in the next years, they could see a steady increase of the yield.
- The co-associate farmers have reported an unforeseen effect that is the increased resistance to drought of crops sown under mulch. At early growth stage, the delayed and poor rainfall often induced losses of crops in burned plots, while plots under Slash & Mulch resisted to drought thanks to mulch and moisture conservation.

As a result, the Technical Expert concluded that there is no need for technical adjustment and the technique has been perfectly transferred by the project, understood and implemented by farmers with clear acceptance, recognition and large growing adoption. Having experimented only during two rainy seasons, ***the Slash and Mulch technique*** has shown impressive results with 40% increase of production, 120% more demonstrators in the second year and an estimated 562 adopters in 59 villages. This is a breakthrough approach that needs to be widely disseminated as an alternative to slash and burn method and that has also shown significant results in terms of extreme weather

mitigation. Indeed, although the rain was delayed and scarce during the crop establishment, all farmers reported drought resistance on slash and mulch plot thanks to the increase of soil moisture and crop loss mitigation. CORAD initiative to explore alternative such as Slash &Mulch have delivered a sustainable path way:

The comparative analogy between the 'Slash and Mulch Agriculture Technique and 'Slash and Burn Agriculture Technique' on the Demonstration Plot.

Slash and burn (control plot)	*Slash and mulch (Demonstration plot)*
No work load only for burning	More work for slash and mulch
Easy to sowing seed	Not easy for sowing seed because opened mulch and sow seed
More weed and hard to pull out weed	Easy to pull out weed
Less soil moisture	More soil moisture
Less organic matter, only ash	Darker soil color, good smell, more organic matter
Less soil fertility	More soil fertility
Less yield	Good growth of crops (deep green leaves, bigger stem and cob, higher, longer corn ear etc.) and more yield
Soil erosion cause less fertility and after 2 years crops yield very low	Soil fertility improve year by year and crops yield can be sustain or increasing
Not sustainability	Sustainability

Slash & Burn Plots

Slash &Mulch Plots

Slash crops stocks to continue S&M

Fertilizer respond on S&M plot

Good smell at S&M plot

ALTERNATIVE TO SHIFTING CULTIVATION: SLASH AND MULCH AS THE SUSTAINABLE AGRICULTURAL TECHNOLOGY

The **"Slash and mulch"** technology is a relevant alternative to mitigate the soil and vegetation degradation induced by intensified slash and burn techniques; there are multiple opportunities for relevant community based interventions towards watershed and natural resources management. CORAD so far has identified slash and mulch as an appropriate technique for taungya gardens; in the form applied in the project demonstration plots, crop residues, weds and bush regrowth are slashed before the rainy season and, instead of being burnt, are spread on the soil as a mulch: the crop (normally corn and beans) are sown through the mulch. The practice is already known and practiced by some farmers (see box under Finding 9). If enough biomass is available to cover the soil, moisture retention reduces water stress, erosion is reduced and some organic matter is recycled. While this technique is not likely to allow more than mitigating soil depletion associated with semi-permanent and permanent slope cultivation, it is effective and readily adaptable. As observed by GRET's Expert, the technique is well understood by co-associate farmers, no technical adjustment required. In terms of adoption, non-adopters in village focus groups mentioned the fact that despite the reduced labour involved, in many case they do not even fell trees in bush areas but fire directly without felling, which makes slash and mulch comparatively more labour intensive. Nearest to the village, it is also difficult to avoid fire, and children have been blames for some failed trial plots where the mulch was burnt. Earliest slashing so that mulch starts rotting before the onset of the dry season might reduce this risk.

In Mangkheng village farmers practice slash and mulch ("Lour lo") since as far as 1999

Several villagers practice slash and mulch since several years. This was noticed by the GRET advisor in his report. Four of them were present in the meeting and shared their experience.

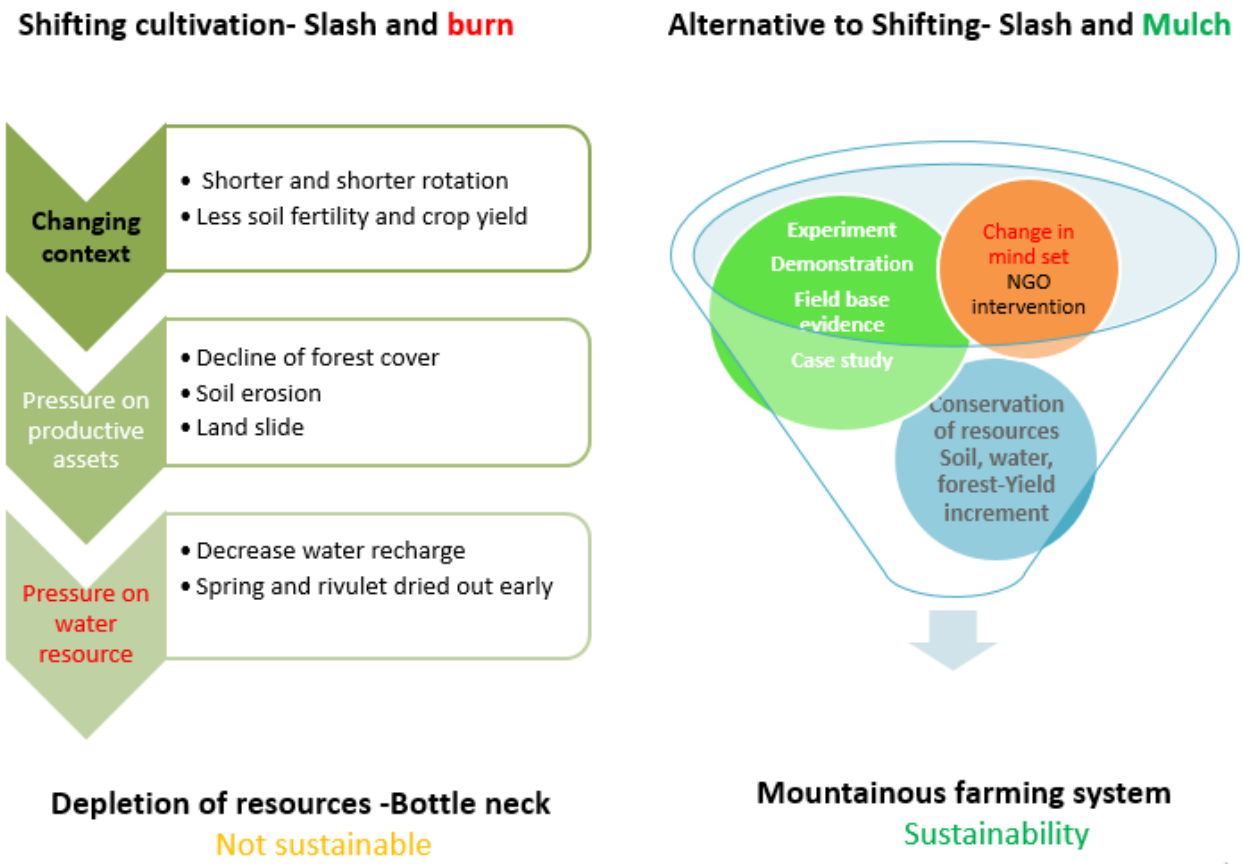
U Hre Tai started practising slash and mulch in 1999 after a training with the Falam Baptist Association. He is applying it year after year to the same 1.5 acre plot. The soil has improved year after year. For instance, the cabbage he produces weigh 50% more. There are no more pests. His main problem is remoteness of the plot to market his product. Five other villagers have followed in U Hre Tai steps.

Faw Hnung started in 2013 after he observed better corn growth in an area of his plot where he had sown despite the fact that mulch had not burned. Since then he is mulching this 0.5 acre plot every year; it is surrounded by forest and does not risk burn from neighbouring fields. The corn harvest has increased from 5 to 7 and even 10 baskets. Ngun Cung started in 2018 imitating U Hre Tail; the 1 acre plot now produces 15 corn baskets instead of 10.Dawt Pen started in 2012 in 1.5 acre plot; she produces corn nd golden pea. The corn harvest is now up to 20 or 25 baskets. Many corn plants have two ears instead of one. The four of them attribute the increased yield chiefly to the fact that mulch conserves soil moisture; also mulch turns into organic fertilizer. The labour for weeding is much less. The call the practice "Lour lo", which means unburnt field in Chin.

Those who prefer to continue to burn, mention as reasons, and the fact that it saves labour (they burn without slashing), that fire kills pests and ash fertilizes the soil. For long most villagers would laugh at U Hre Tai but now they see the interest from outside and start to recognize the value of the "Lour lo" practice.

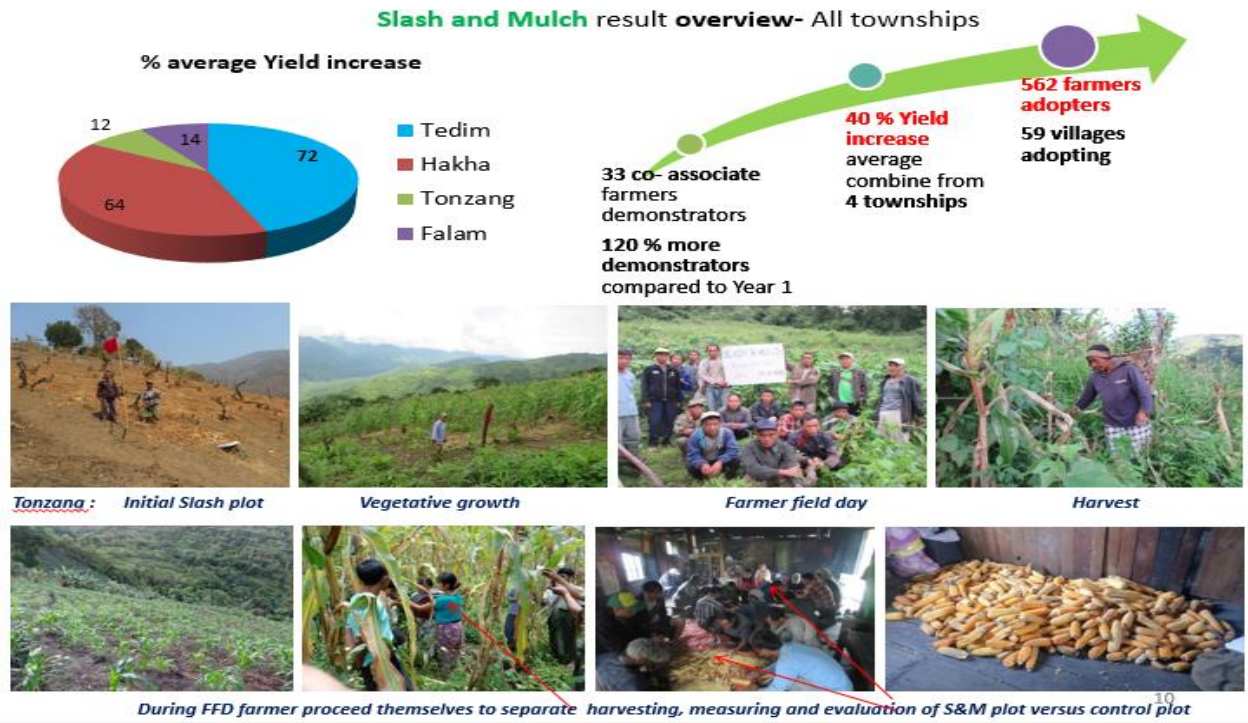
It is observed by the farmers that "the result is still positive and moving forward. The soil is darker, easy to dig, easy to pull out the weeds, bigger corn-cop / fruit and plant, deep green leave and plant, fewer weeds compare to Slash and Burn plot, sometime micro-organism and earth worm could be found at the test plot that showed the soil structure is changing into better fertilization. The yield is even better than control plot (Slash and Burn). The evidence from Slash and Mulch plot is that yield is 3 - 5.5 baskets (30-55 baskets

rate/acre)but the control yields at test plot is 2- 3.75 baskets (20-37.5 baskets rate/acre) even in the first year 2017 based on the Data records of Slash and mulch"[2]. The following diagram conveys the critical difference between the 'Slash &Mulch Agriculture and Slash and Burn Agriculture in terms of its sustainable prospect of Chin Upland Agriculture Context.

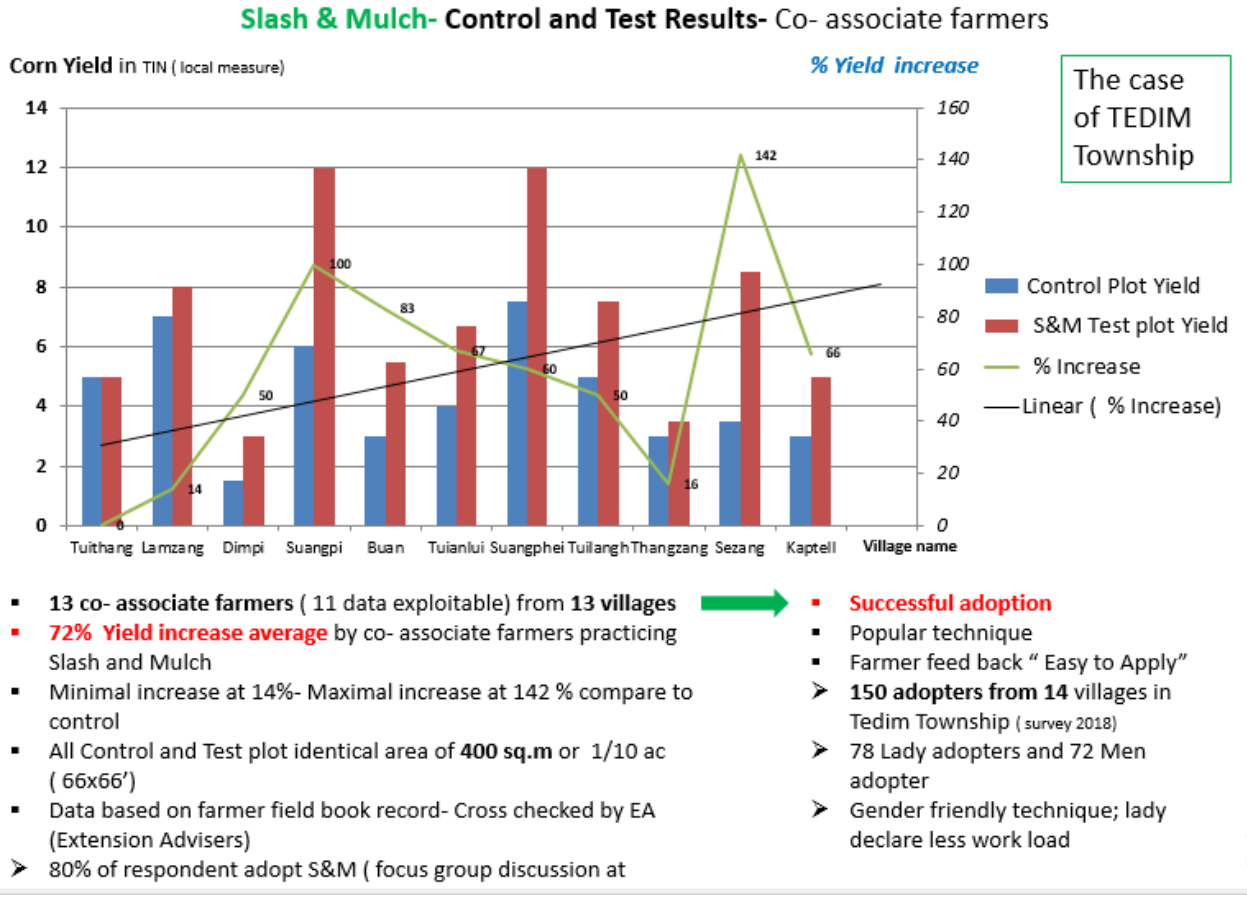


In its critical analysis, the shifting cultivation is to be transformed into the sustainable agriculture of slash and Mulch, replacing the obsolete traditionalized system of slash and burn agriculture. As far as the filed evidential information as result of field participatory evaluation is concerned, the slash and mulch technology has proven itself for the radical improvement of yields in overall 5 Townships as to the fact that ***33 co-associate farmers*** (2018) demonstrators-120 % more demonstrators comparing to year 1---***40 % yield increase average—562 adopters*** (2018) from **59 villages** as it is mentioned in the following diagram as a whole.

[2] *The 'Technical Support mission' Agriculture Extension Services-Mission No.4: Follow Up of Agriculture Activities on 'Promoting Agriculture Diversification and Economic Integration in Northern Chin State'-Myanmar.*



This diagram shows the significant result of Slash & Mulch-Control and Text Results-Co-associate farmers in Tedim Township.



CHANGES OR IMPACT THROUGH TECHNIQUE, SLASH AND MULCH

As many farmers could see all the change of the processes in the demo plots, they become more and more interest to try the technique. In 2017, only co-associated of 21 farmers at 21 villages in four township through the financial support, and in 2018, there are 482 farmers scale up on their farms at 56 villages in four township (Falam, Hakha, Tedim and Tonzang) by the good result of the demonstration activity and sharing experience and learning among them from the field. Many farmers proved that soil conservation technique for slash and mulch is so much better than slash and burn plot as the soil is more humid. Farmers grow corn, local bean and other local varieties. Every co-associated farmers who practiced slash and mulch system said that the yield increased obviously, soil is more humid and darker slightly after 2 years than the previous.

Key Finding:

- ***33 co-associate farmers*** (2018) demonstrators-120 % more demonstrators comparing to year 1---***40 % yield increase average—562 adopters*** (2018) from **59 villages** as it is mentioned in the following diagram as a whole.
- All farmers observe improvement in soil quality and report less weed in S&M plot, better soil texture, softer-loose soil, black colour like first year of shifting, easier to dig than control plot), better plant growth, better plant height and sometimes larger corn cob .
- one farmer reported that due to late rain, the plant under S&B died-off and suffered stunted growth while the plant under S&M could endure the drought because of better soil moisture content;
- One lady reported better crop stand, larger cob size and plant in S&M plot, easy land preparation (soft soil) compare to hard soil in control plot.

Control Plot Result (Slash and Burn) in Hakha Township

Test Plot Result (Slash and Mulch) in Hakha Township

THE MOST SIGNIFICANT CHANGES:

In its significant Program, CORAD has selected 2 Demonstrators out of 33 Demonstrators in 4 Townships in the framework of their significant changes and achievement in the area of their agricultural practices. The following farmers are directly interviewed by the Township Managers.

Date of interview: 8/1/2019
Name of farmer: Ning Khan Hmung
Village: Lamzang, Tedim

My name is Ning Kahn Hmung and born in 1952 at Lamzang village, Tedim Township. I passed Matriculation from Tedim in 1973 and Joined and worked as Village tract clerk (lower clerk) position at Administration Department of Township office, Tedim from 7/7/1973. I retired on 21/12/2004 and live in my native village, Lamzang up to now a day. There are 12 people (male 5 and female 7) in his family.

I cultivated perennial crops such as Avocado, Mangoes and Cluster bean on his Farm from 20005 for income generation. I dug paddy terrace by myself since 1987 and cultivate Paddy on the terrace. I used to grow Corn and beans on my farm and grew Sunflower in 1985. I got enough home consumption through my crops and gained extra income from Sunflower and Ground nut selling.

I grow Garlic, Onion, Cabbage and Tomato from 2005 and could sell Cabbage and Tomatoes. I could get extra income from these crops production selling and supported my family need and School fees for my children. Villagers selected me for Care Myanmar group chairman in the village from 2003 and worked continuously 10 years as a chairman. So far, I am selected as a committee member in DRD.CORAD project came to work in Lamzang village and form Farmer Group in the early of 2017, and at that time I am selected by farmer group members for village facilitator position and working for it up to now.

The farmer group held meeting and selected me for Slash and mulch co-experimenter farmer in the village and started S&M technique on 66' x 66' size on his plot with control (66'x66' size) plot. I grow Corn on both trail and control plots***. I got 5 baskets of Corn from S&M plot and 3.5 baskets from control (slash and burn) plot***. Lamzang village's farmers agreed and accepted Slash and Mulch technique is better yield than local method, Slash and burn through U. Ning Khan Hmung trail plot results. I continue slash and mulch with control plot in 2018 and grew again Corn and bean. The Corn cobs are bigger and longer than Corn on control plot***. I had harvest Corn in September, 2018, getting 5 baskets in test plots and3.2 baskets in control plots (Slash and Burn).*** So, I decided himself to stop slash and burn and to extend slash and mulch on my farm next year, 2019.

I encouraged village's farmers to follow me and practice as slash and mulch technique because maintain soil moisture and resistance draught in hot season for crops, darker color of soil and more fertility, better growth of Corn, bigger Corn cobs and longer than slash and burn and finally more yield on slash and mulch through his experimentation.

Record by Cin Mun Mang
Township Manager, Tedim

Date of interview: 11.1.2019
Name of farmer: Daw Zaang Khum Ting
Village: Zawlnu

I have cultivated corn as slash and burn, traditional method on my shifting farm since 2014 and up to 2016 year and the yield was decreasing year by year. After 3 year of my practice, CORAD organization has conducted the slash and mulch training in Zawlnu village on December, 2016 and I have attend to that training. So, I have been interested to experiment this technique. Village farmer group held farmer group meeting and FG committee announced that who have interest on slash and mulch technique can do experimentation for our village after training, at that time I proposed to farmers "I will do experimentation of the slash and mulch technique" as I have interest since the Slash and Mulch training.

I started slashing and mulch on the part of 66 feet x 66 feet size of my farm through CORAD field staff facilitation and leading on January, 2017. And the other part of my farm were burn. I sow the Corn seeds all my farm including test plot of S&M on April, 2017. All of the stock of Corn and weed were decomposed and have more soil moisture, and the germination of Corn was good, darker soil color and easier to weeding on S&M plot than S&B plot. ***I harvested Corn on September, 2017 and got 3 basket from Slash and Mulch plot and only 2 basket from Slash and Burn plot of the same size with test plot. In 2018, Corn was harvested on September 18, getting 3.1 Baskets in Test Plots whereas 1.8 Baskets in Control Plots (Slash and Burn).***

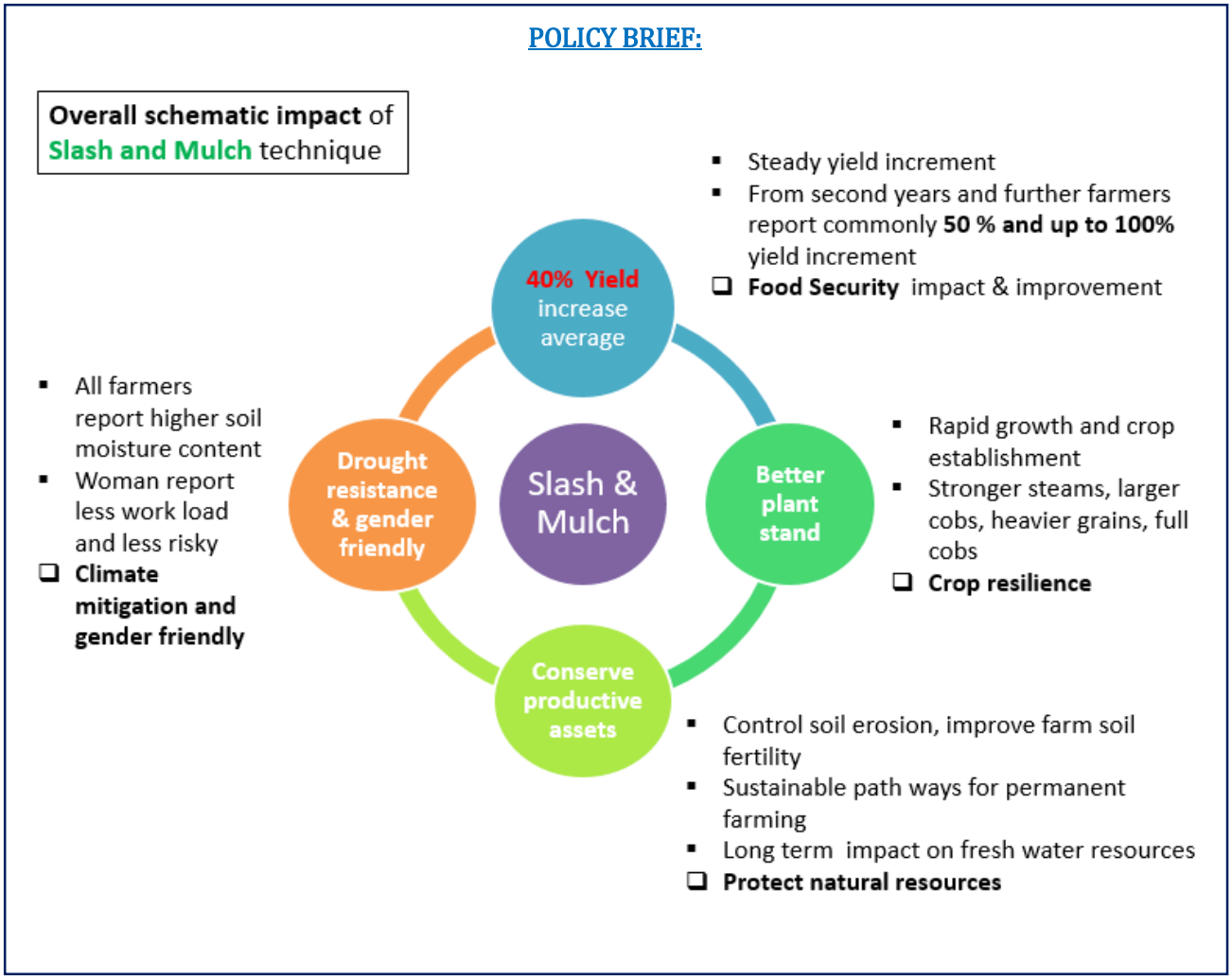
CORAD conducted Farmer Field Day on my farm and invited all of farmer group members, outsiders in the village and some neibouring villages' farmers. Farmers who participated and visited to my farm seen the results of Slash and mulch technique (Corn growth, soil improvement etc.) so, many farmers have interest on the technique through this field visit, sharing experience and discussion during Farmer Field Day. 10 farmers from Zawlnu village and 20 farmers from neibouring villages practice Slash and mulch on their farms in 2018 through this trial plot. I shared my experience on the Slash and mulch technique and encouraged to test this technique to other farmers in the village. And I could share about the technique as much as I can to disseminate technique to many farmers who saw the Corn growth difference between S&M and S&B on my farm and asked me, as my farm situate on the road. So that I hope all the farmers of in my village will be adopted this Slash and mulch technique within next five years.

I continue Slash and mulch on the same plot of last 2017 year plot in 2018 again. I sow again Corn on both trail and control plots. The Corn growth on trial plot is better than control plot and not yet harvested Corn. I will extend the S&M on my farm next year because I have seen the results of S&M through my experiences. And I would like to express that S&M technique can be reduced environmental degradation and improve soil fertility. So, I would like to request CORAD that to continue farmers' exchange visit for dissemination of techniques in future.

Record by Tlawng Za Mang
Township manager, Falam

SUSTAINABLE PROSPECT

The 'Slash and mulch: the technology' does not request any external inputs but needs to be further disseminated to become a known alternative for large numbers of farmers using taungya derived farming techniques. In the sustainable pathway of the Upland Agriculture, Shifting Transformation, it is essential to put into the practice of Slash and Mulch Technology as the sustainable agriculture. There is an opportunity and a moral responsibility for CORAD to advocate the approach and results dynamically to Donors, Governments level and other stake holders (IP and development actors). Once the diverse stakeholders have decided which agriculture practice provide the desired combination of production, yield increase, human warfare and environmental safety, such as the example described, it is necessary to search for policy engagement that will bring a paradigm shift toward the sustainable development of upland agriculture transformation and that will lead to a broad-based adoption of those desired, slash and mulch agriculture technology. In its significant intervention, the following diagram explain the sustainable characteristic of the slash and mulch technology as the alternative to the slash and burn agriculture in the pathway of the shifting agricultural transformation.



Slash & Mulch- Alternative to Shifting cultivation

Falam Township Control and trial plot

Corn emergence under S&M Vegetative growth

Maturation

Tedim Township LIFT evaluation mission

Farmer Field Days

Harvest of S&M plot

Hakha Township

Farmer Field Days

Harvesting and evaluation of Control and trial plot 8

Participatory evaluation of control and S&M trial plot

Falam township- During FFD, farmer group members are engaged to harvest and evaluate control and trial S&M plot – See by themselves

Tedim township - Farmers group harvest, then measure control and trial plot

Hakha township- Farmer discuss tasks, evaluate soil improvement , harvest and witness themselves S&M trial results 13

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