



Ministry of Agriculture, Livestock and Irrigation
Department of Agriculture
Township Officer Office
Mindat Township
Chin State



Establishment of SALT Demonstration Plot
(Sloping Agricultural Land Technology)
Bawkhui DOA Farm
Mindat Township

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Introduction

SALT (Sloping Agricultural Land Technology)

Sloping Agricultural Land Technology is a package technology on soil conservation and food production, integrating different soil conservation measures in just one setting.

❑ An erosion control technique easier and less expensive to implement than traditional methods (reforestation, terracing, contouring and cover cropping, etc.)

❖ Appropriate for small-scale farmers

❖ Adopters can easily modify SALT depending on local situation and available resources

❑ Started Conceptualize by-

❖ Mindanao Baptist Rural Life Centre (MBRLC) Philippines

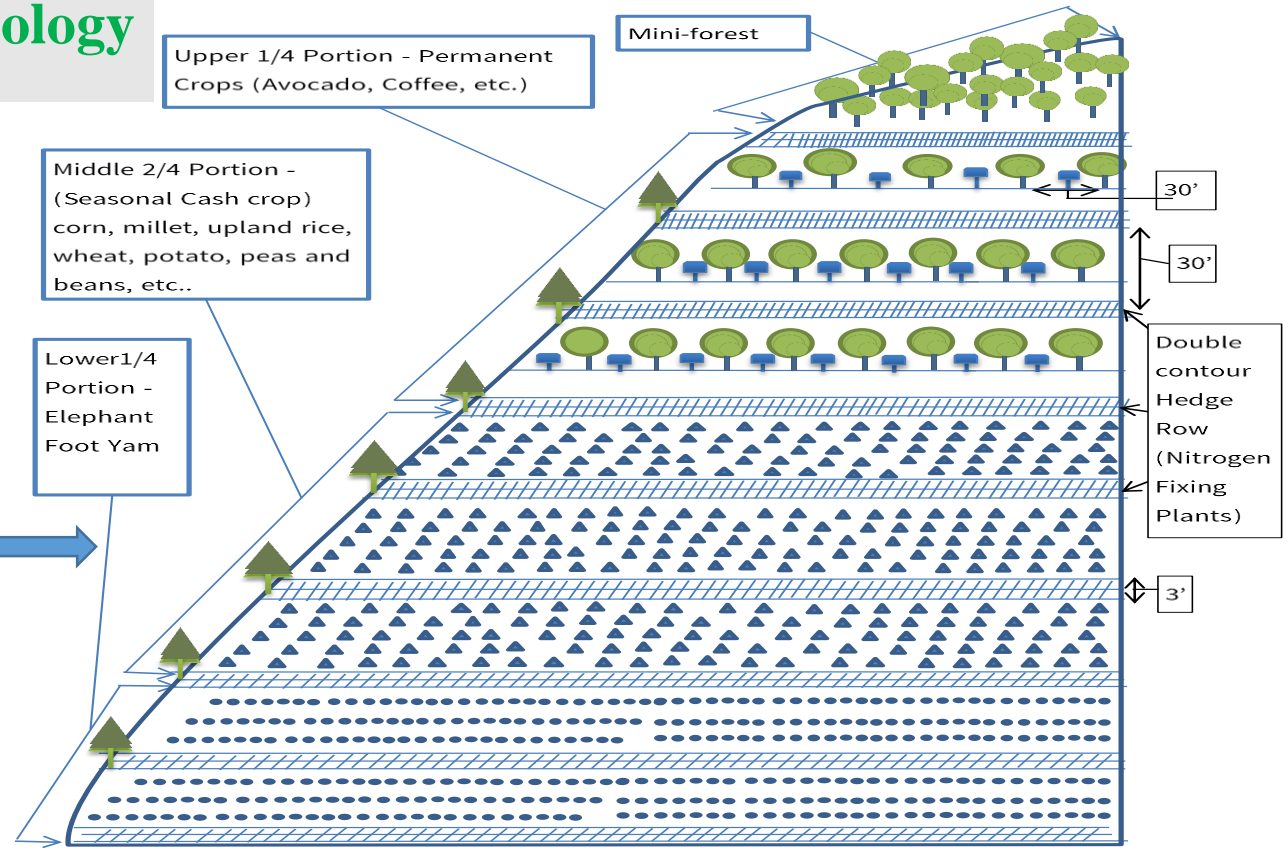
❖ 1971

❑ Types of SALT Model

- ❖ **SALT 1 - Sloping Agricultural Land Technology**
- ❖ **SALT 2 – Simple Agro-Livestock Technology**
- ❖ **SALT 3 – Sustainable Agro-Forest Land Technology**
- ❖ **SALT 4 – Small Agro-fruit Livelihood Technology**

SALT-4 Small Agro-fruit Livelihood Technology

Suggested Appropriate Model for Mindat Region



Cropping Pattern: 1/4acre Permanent Crop, 2/4acre Seasonal Cash Crop, 1/4acre Elephant foot yam.



Figure. A Typical Design of SALT-4 Small Agro-fruit Livelihood Technology for Starter Pack Scheme (WSAP/DOA)

❖ Verifying the Effectiveness of SALT

❑ Studied in Philippines in 1984, (MBRLC) *Source: Internet, Author- Henerylito D. Tacio*

○ Controlling Soil Erosion

		Tonnes/ha/yr	Remarks
1	Non-SALT	3.4	6 years-average
2	SALT	194.3	

Soil Losses
Non-SALT **57 times** > SALT

○ Income Generation - SALT **2 times** > Non-SALT

○ Crop Productivity - SALT **2 times** > Non-SALT

○ Labor Management - SALT **2 times** > Non-SALT

Aims and Objectives

- ❖ **To Transfer SALT Package through Demonstration Plot**
 - **Awareness, Acceptance and Adoption**
 - **Adaptation and Manipulation of SALT as Alternative Agricultural Technique to Replace Existing Shifting Cultivation (Slash and Burn) System in the Region.**
 - **Reduction of Deforestation Stress and Erosion Control**
 - ✓ **Conservation of Hilly Land to Green and Stable Land , and Increase Productivity in Climate Resilient Manner.**

Problem Statements

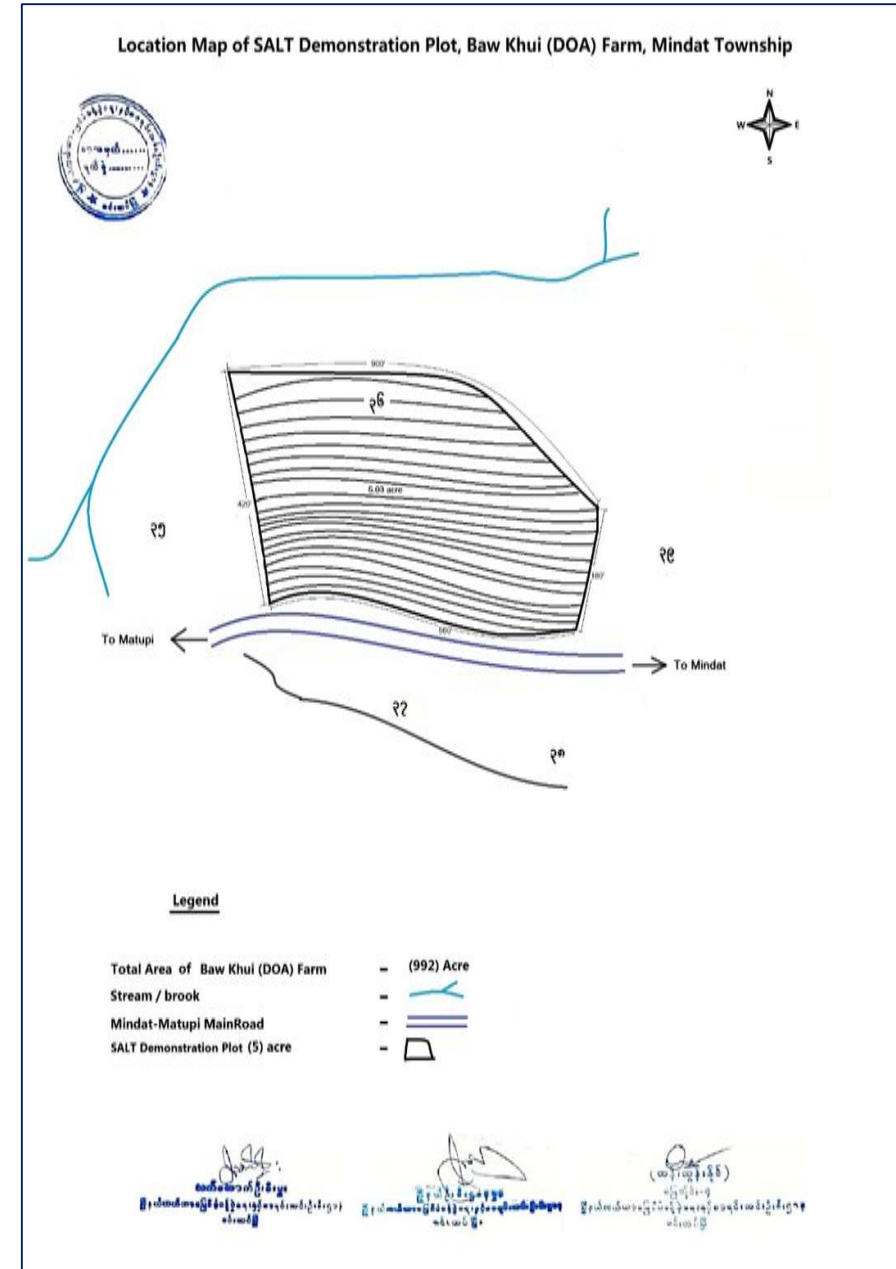
❖ **Problems of Traditional Shifting Cultivation (Slash and Burn) on Sloping Land**

- **Deforestation.**
- **Organic Carbon losses and emission of carbon dioxide (CO₂) gas into the atmosphere.**
- **Land degradation and top-soil erosion leading to nutrient losses.**
- ❑ **Declining crop productivity and increasing food insecurity and poverty.**

Materials and Methods

Establishment of SALT Demonstration Plot

- ❖ SALT Model- 1
- ❖ Location – Bawkhui Farm
- ❖ Area - 5 Acres
- Starting date – 16.7.2020
- Implemented date – 30.9.2020
- ❖ Materials
- A-Frame
- Planting Seed Stocks
- ✓ Perennial crops – Avocado, Orange
- ✓ Seasonal crops – Field pea (*Pisum sativum arvense*)
- ✓ Contour hedge row – Bitter bean, Leucaena, Pigeon pea
- ✓ Wind break - Silver oak



SALT-1 A Typical Design of SALT Demonstration Plot, Bawkhui DOA Farm. Mindat Township

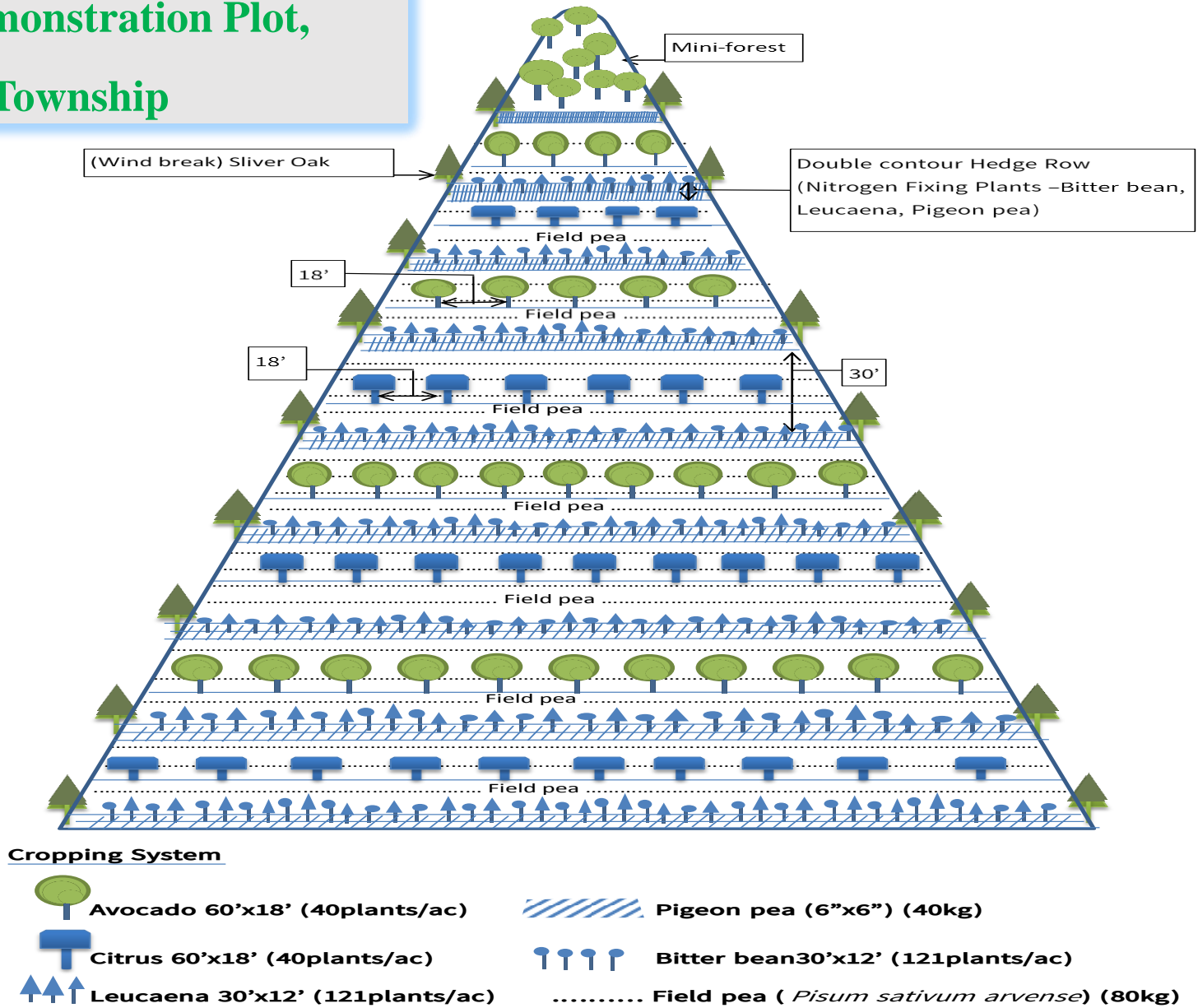


Figure. A Typical Design of SALT Demonstration Plot, Bawkhui DOA Farm (WSAP/DOA)

Land Preparation and Planting

- ❑ Slash and Land Clearing Without Burning.
- ❑ Followed **Ten Steps of SALT** in Demonstration Plot Establishment.
- ❖ **Step-1 Making A-Frame**

Slashing and Clearing



Making A-Frame



❖ Step-2 Measuring and Locating Contour Lines 15 Feet Apart

✓ Pegging 6 feet apart along the contour lines



❖ Step-3 Prepared Contour Lines for Hedge Rows

- ✓ Hoe digging 3 feet width along the contour line ready for planting pigeon pea as Nitrogen Fixing Shrubs and make holes (2' x 2' x2') for Leucaena and Bitter bean(12' x12')as Nitrogen Fixing Trees (Hedge Row). Prepared Hedge Rows every 15' along the slope.



❖ **Step-4 Planting NFT as Hedge Row**

- ✓ **Planting NFT as Pigeon pea (6''x 6'') three rows, 1½ feet apart inter-row and**
- ✓ **Leucaena and bitter bean 12 feet apart plant spacing alternatively.**

Bitter bean(*Parkia speciosa*)



❖ **Step-5** Cultivation of Alternate Strip

Field pea (*Pisum sativum arvense*)



❖ **Step- 6 Planting Permanent Crops**

✓ **Planting Avocado and Orange (60 ' x 18') alternate rows**

Avocado (*Persea americana*)



Orange (*Citrus spp.*)



❖ **Step- 7 Plant Short-Term Crops**

- ✓ **To grow Potato and Corn in coming rainy season.**

❖ **Step- 8 Trim Nitrogen Fixing Hedge Rows**

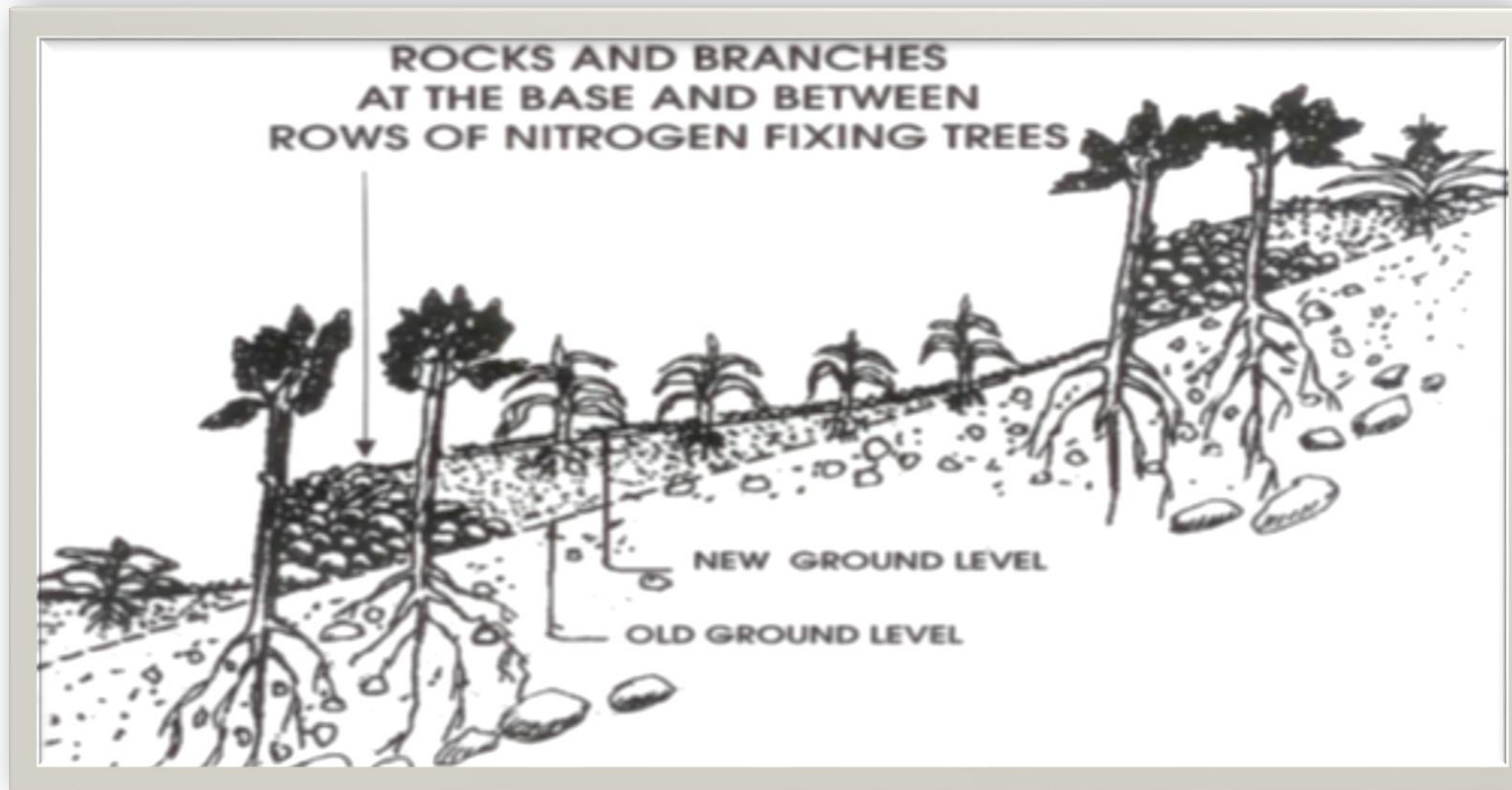
- ✓ **To cut down NFT at the height of 3 feet.**
- ✓ **To pile cut leaves and twigs at the base of the crops.**

❖ **Step- 9 Practice Crop Rotation**

- ✓ **To practice crop rotation with legumes and none legumes.**
- ✓ **Other management practices in crop growing (weeding, disease and pest control (IPM))**
- ✓ **To practice Organic or GAP production system.**

❖ **Step- 10 Build Green Terraces**

- ✓ **Keep gathering and piling up straw, stalks, twigs, branches, leaves, rocks and stones at the base of NFT(Hedge Rows).**
- ✓ **By doing this regularly for years, strong permanent natural green terraces being formed along the contour lines of the hill.**



Accomplished SALT Demonstration Plot, Bawkhui Farm, Mindat Township (2019-2020 Fiscal Year)



Results and Discussion

- ❑ **Extension Education delivers to farmers through SALT demonstration will enforce the farmers to practice SALT, which will lead to-**
 - **The development of environmental friendly sustainable Agricultural production system in the region.**

- ❖ **Awareness, Acceptance and Adoption through Demonstration Plot**
- ❖ **Reduce Deforestation Stress and Stabilize Eco-system of the region.**
- ❖ **Control Erosion, Improve Soil Fertility and Increase Crop Productivity**
- ❖ **Increase Households' Income Generation**
- ❖ **Foster Poverty Reduction and Improvement of Socio-economic Status of Local Farmers.**

Advantages of SALT

- **Control soil erosion, help restore soil structure and fertility.**
- **Be efficient in food crop production.**
- **Be easily duplicated by upland farmers using local resources.**
- **Be culturally acceptable and require minimal labor.**
- **Be fully productive in as short a time as possible.**
- **Be economically feasible and ecologically sound.**

Conclusion and Suggestion

❖ No “*Universal System*” for all farmers working under varying-

➤ socio-economic and bio-physical conditions

❖ SALT requires much “**Hard Work**” and “**Discipline**”

❖ No system can bring depleted, eroded soils back into production in a few short years

❖ The price of soil loss is poverty

But  Land will be restored to a reasonable level of productivity by using SALT

Financial Support for small-scale poor farmers (Grant/Loan)

Need to persuade and convince the importance of SALT as the key solution to replace Traditional Shifting Cultivation.

➤ State and Union level authorities, parliament members, religious leaders, social and ethnic leaders.

Strong Support, Guidance and Supervision of State and Union DOA in SALT adoption processes

Expansion of SALT acreage year to year for sustainable land settlement.

Social mobilization.

A wide-angle landscape photograph showing a mountainous region. In the foreground, there are terraced agricultural fields with rows of young plants, possibly coffee or tea, on a hillside. The middle ground is dominated by dense, lush green forests covering the slopes of the mountains. In the distance, more mountain ranges are visible under a bright blue sky with scattered white and grey clouds. The overall scene is vibrant and scenic.

Thank You