

Project work on Environmental
studies.

Topic: Agricultural practices (Terrace)
and its impact on the
environment of Khonoma
village.

Submitted
to

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by

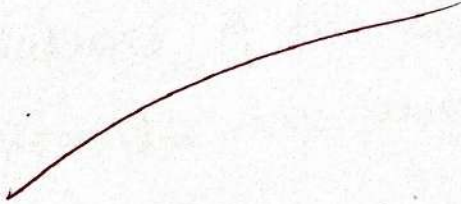
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Introduction.

The state of Nagaland lies between $25^{\circ}60'$ and $27^{\circ}40'$ latitude north of the equator and between the longitudinal lines $93^{\circ}20'$ and $95^{\circ}15'$, having an area of 16,579 square km. The state comes under eastern Himalayan agro climate zone. More than 90% terrain of the state is hilly. The state of Nagaland enjoys a salubrious climate. The torrential monsoon rains are an integral feature of the state's weather. The state records an average annual rain of 2000mm - 2500mm. The major precipitation occurs between July - September but rainy season is from May onwards. The mountain region is the source of several streams and rivulets.

Agriculture is the main stay of economy in Imphal and rice is their staple food. The indigenous farming had been in practice by the Nagas since time immemorial. In this process they have developed skills and ideas on how best to grow their crops and enhance its productivity. There is also variation in the region in terms of soil and climatic conditions, geographical terrain, management practices etc. which in a way is responsible for great diversity in rice cultivation among the people. Rice plays a significant role in the socio cultural life of the people in many parts of North east India. It occupies the primary position in a composite and varied mixture of crops.

Terrace and Jhum cultivation of paddy are widely practiced by the tribal communities in Khonoma. Khonoma have terrace cultivation of paddy wherever water is available for irrigation.

Terrace rice cultivation is recent intervention in hilly terrain and widely followed by the Khonoma people. The productivity of rice under wet and wet terrace cultivation was found to be more as compared to rice under jhum cultivation. Thus, this paper would look into practices of terrace cultivation in Khonoma and its impact on the environment.

Terrace Form of Paddy Cultivation

A terrace is a piece of sloped plane that has been cut into a series of successively receding flat surfaces or platforms, which resemble steps, for the purposes of more effective farming. This type of landscaping, therefore, is called terracing. Terraced fields both decrease erosion and surface runoff, and may be used to support growing crops that require irrigation, such as rice.

The fields are irrigated by a network of water channels. Normally, the terraces are graduated in such a way that water ~~flow~~ down conveniently from one terrace to the other ~~to~~ below it. But in some places, bamboo pipes are also used to regulate the flow of water.

The fields are family owned and handed down from generation to generation.

Impact on the Environment

Terraces reduce both the amount and velocity of water moving across the soil surface, which greatly reduces soil erosion.

Environmental challenges soil loss and degradation due to water erosion are major issues for hillside farmers. Terracing affects the rate of soil erosion caused by water through its effects on local hydrology, runoff characteristics, soil moisture and soil characteristics.

Advantages and Disadvantages of Terrace Cultivation

1. Runoff Velocity

One of the principle advantage of terrace cultivation is that it can protect the terraced area's soil from overly rapid erosion. Erosion happens when moving water strips away soil from the area over which it is flowing. Terracing, by reducing the length of the slope the water has to run over, slow the flow of water. This protects the soil in the area from being carried away in a deluge.

2. Rainwater Collection

Level terraces, like those found in Ichonoma can not only reduce the rate of soil erosion but can also trap and hold rainwater

This allows for the cultivation of water-intensive crops, such as rice, in these areas. Terracing creates flat spaces for crops and canals for water to flow between these areas. Water collected in the terraces can then be absorbed into the soil and sustain crops.

B. Rainwater Saturation

One major disadvantage of terracing is rainwater saturation of the ground. This happens when terracing retains too much water, which is absorbed into the grounds. The problem with ground saturation is that it can lead to water overflow during periods of heavy rains. This can end up causing more damaging runoff than in unterraced areas.

Additionally, if not properly maintained, terraces can lead to greater soil erosion, often down slope

from terracing, than in non-terraced areas.

4. Other Disadvantages

Terracing requires huge inputs of labor to construct and maintain, and when not properly maintained, the effects can be catastrophic.

Unmaintained terraces can lead to mudslides, the creation of deep gulleys and increased soil erosion, particularly in sandy soils or on extremely steep terrains. Terracing also has been shown to reduce soil quality via the leaching of important nutrients from the soil in some areas.

Conclusion

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Indigenous farming systems though primitive and old still occupies a special place in the life of the farmers (Naga). It has become a part of the custom and all their festivals and ceremonies revolve around it. Also such farming systems tend to depend largely on monsoon rain alone. Due to non-availability of well organized irrigation system, a vast area of land which if brought under permanent irrigation, the food grain production in the state could be raised enormously. Though Khonoma is blessed with rich natural resources, faulty agricultural practices have resulted in serious environmental depletion.

## References

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