

OUR ENVIRONMENT OUR HERITAGE



LAND DEGRADATION IN SAMOA



Land degradation is a significant, global environmental problem and Samoa, like other islands of the Pacific is not immune from land degradation. In fact, Samoan island ecosystems are especially vulnerable to the problems of land degradation and unsustainable land use because their natural resource base is limited and ecologically fragile. Clearance of the original forest cover for many areas, particularly the lowlands, has typically started the process of land degradation in Samoa. Changes from traditional agricultural practices to more intensive cultivation have since contributed to the problem. In addition, climate conditions such as high temperatures, severe deficit with rainfall and droughts contribute to soil infertility and land degradation of drought prone areas, particularly on North/South West of both Savaii and Upolu.

Soils, land and landuse have been discussed in numerous publications and a significant number of these literatures have either directly or indirectly addressed concerns with land degradation situations in Samoa using a variety of approaches. A commonly used one is sectoral type of approach whereby most landuse analysis focuses mainly on specific sectors that play key roles in managing the types of activities that depend on land for sustained income and specific sectors that play key roles in managing the types of activities that depend on land for sustained income and livelihood beside other developments which require the use of lands. Discussion therefore on land degradation in this report and context will be drawn from a literature review of a number of publications.

CAUSES OF LAND DEGRADATION

Land Degradation has been identified with multiple causes due thus to forces of nature and to a much larger extent induced by human activities. With cyclone frequency and prolonged droughts which mainly are by-products of climate variations and El-Nino events, couple with intense spread of land cultivations for subsistent and commercial agriculture and, in addition to the swift nature of infrastructural development penetrating the interior and coastal lands, degradation of land and its resource base is believed to be almost non-reversible especially in view of severe repercussions on the soil and productivity of the land.

TYPES OF CAUSES / ACTUAL CAUSES

a) Natural degradation hazards:

- cyclones
- droughts
- volcanic activities

b) Direct Causes of land Degradation:

- overcutting of vegetation
- shifting cultivation without fallow periods
- overgrazing
- non-adoption of soil-conservation management practices
- extension of cultivation onto lands of lower potential and/or high natural hazards
- improper crop rotation
- unbalanced fertilizer use
- overcutting of vegetation
- shifting cultivation without fallow periods
- overgrazing
- non-adoption of soil-conservation management practices

- extension of cultivation onto lands of lower potential and/or high natural hazards
- improper crop rotation
- unbalanced fertilizer use
- overpumping of groundwater
- deforestation
- Careless burning of rubbish causing bush fires in forest areas during the dry season.
- Uncontrolled land use and mode of land cultivation
- Careless spill of toxic wastes and persistent organic pollutants
- population increase
- attitudes
- economic pressure
- land tenure

The underlying causes of land degradation are rooted at the toe of the problem. Particular notable of the root causes as perhaps the most predominant driven factors of land degradation are economic pressure, attitudes and poverty. Economic pressure of marketing goods and services has resulted in the transition from subsistent form of living to cash-based economy lifestyle. Poverty elements of Samoan society has significant impacts on the way land practices is fashioned however success with implementation of solutions to land degradation is largely dependent on attitude changing from wasteful practices to adoption of more efficient alternatives. The process of change will obviously involve a change in social and economic attitudes and actions. It will require a change in people's lifestyles and the whole philosophy that guides their lives much therefore change.

EFFECTS OF LAND DEGRADATION UPON PRODUCTION

- Land is abandoned (where degradation is severe)
- Crop yields are reduced
- Inputs and costs of production are increased (where farmers attempt to combat reduced yields by increased input)
- Responses to inputs are decreased
- Flexibility of land management is decreased
- Risk is increased
- Labour, and technical and financial resources are diverted to reclamation.

Effects of land degradation are significantly apparent in agricultural outputs of production from land. A correlation can be clearly established from this pattern between degraded lands versus crop yield reductions. This consequently lead to land abandonment and costly efforts to combat reduced yields. Other resultant factors are noted as increase in associated risks and labour intensive as well as diversion to other uses and artificial means to buffer the impacts.

CONSEQUENCES OF LAND DEGRADATION FOR THE PEOPLE

- Landlessness is increased
- Food supplies are reduced or less reliable
- Labour requirements are increased; and
- Income are decreased

In terms of impacts affecting people, most are marginalized to the extent of landlessness and sustained food supplies are limited labour intensive and income generally decreased.

CONSEQUENCES OF LAND DEGRADATION ON THE ENVIRONMENT

- Reduced vegetation cover to the soil
- Reduced return of organic matter
- Less biological activity in the soil
- Increased pollution from increased use of agrochemicals
- Increased land sites contamination due to persistent organic pollutants and persistent toxic pollutants.
- top-soil loss
- watershed destruction with subsequent water shortages
- drinking water contamination
- biodiversity loss
- coastal flood damage during the rainy season
- marine pollution
- cultural impoverishment

Deforestation has mostly started the process of degraded land areas as being the ultimate tool of land cover clearance for a number of economic reasons. This has exerted extreme pressure on land resources and depriving it of sustainable outputs from land, extinction of biodiversity, and affecting also water resources and supply. This is due to top-soil removal during wash-off of the exposed land cover resulting water contamination and coastal flood damage and marine pollution. All together given close association of the environment and our culture identity, degradation of land means degradation also of our cultural treasures.

Adverse effects on the environment are more visible and felt, not only would the environment be left with severe scars when soil becomes bare and expose to compaction but land would be discarded as lack significant fertility when there is reduced return of organic matter on the ground. This consequently lead to less biological activity of the soil and increased land pollution from resorting to agrochemical uses.

OTHER CONSEQUENCES

Other faces of land degradation that are highly pronounced on government and customary lands:

- degraded lands due to scoria mining and/or excavations of aggregate materials
- destruction of the coastal environment resulting from large scale commercial mining of sand.
- destruction of mangroves and inappropriate coastal reclamation.

Degradation of land areas by removal of scoria materials and aggregates is another form of practice that is increasingly synonymous with high demands for land development initiatives and infrastructural developments. Coastal degradation are mainly due to the mining and removal of sand and the rising need for reclamation of the seas which often impact on inshore fishery and fish stocks.

For more information about this important issue - please contact our Land Management Division - DBS Building - Level 3 - ph# 23800

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