REVIEW

Implementation of Soil Conservation Policies and Enactments in the Upper Mahaweli Catchment, Sri Lanka – A review.

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Abstract:
The Accelerated Mahaweli Development Project is the largest multi-purpose river basin development project ever implemented in Sri Lanka. The Upper Mahaweli Catchment Area (UMCA) covers 3118km^2 of the mid and up country of Sri Lanka and feeds four reservoirs to generate over 54% of the country's power requirement and irrigate about 300,000 ha of agricultural land. Soil erosion and siltation in the water bodies are the major causes leading to the degradation of land and water resources in the UMCA. Hence, this study was attempted to analyze whether the present and proposed land management policies are strong enough to address the existing issues in the UMCA. It was found that soil erosion and consequent degradation of land and water resources are mainly attributed to the limitations in the existing institutional set-up, regulatory framework, property right system and poverty. Hence, the enforcement land management policies with strong political will is urgently needed to ensure the protection of land and water resources, not only in the UMCA, but all over the country.

Key words: Soil erosion, Land enactments, Soil conservation, Upper Mahaweli Catchment

Introduction

Soil erosion is regarded as the main cause of the widespread land degradation in the Upper Mahaweli Catchment Area (UMCA). This has been accelerated in the early 19th century with the introduction of plantation crops such as coffee and tea. Large-scale clearing of forests began in the 1880's in all parts of the central highlands, and most of these lands were situated in the UMCA. Even after independence, land clearing has been continued for the establishment of human settlements and for the cultivation of tobacco and exotic vegetables[1]. The erosion rates under different agricultural land uses have been estimated in several studies. Maximum Potential Erosion Rate (MPER) for selected locations in Sri Lanka were estimated based on Universal Soil Loss Equation[2]. A study conducted in tea lands confirmed that the mid country intermediate zone is mostly vulnerable to soil erosion[3]. Soil erosion hazards under different land uses in the UMCA were assessed. According to that, market gardens, poorly-managed seedling tea areas, chena and tobacco cultivations are the most vulnerable land uses for soil erosion . Nearly 80% of the total soil loss due to farming in the UMCA is caused by these three land use systems[3]. Degraded patana and scrub jungles also account for 18% of the total soil loss in the area. Thus soil erosion has been closely associated with the land use systems. In addition, many interrelated socio-economic factors such as fragmentation of lands due to increase in population, neglected and poorly-managed tea lands due to low income, and encroachment of sensitive crown lands have also contributed to soil erosion[4].

Policies and legislations required to protect the land resources in the country have been introduced since after independance. However, poor implementation of these legislations under the present institutional set-up at national, provincial and local levels is one of the key constraints to land resources management in Sri Lanka. In addition, inadequacies in the existing legislations to meet current issues in the land sector, lack of coordination among institutions, duplication and gaps in responsibilities have adversely affected the management of land and water resources in the country [5].

Therefore, this paper reviews the proposed land and water policies in Sri Lanka and analyze their impacts on land resource management in the UMCA under the existing institutional set-up. The paper also discusses the problem of degradation of land and water resources in relation to the

existing policies, legislations and institutional set-up, describes major issues in land degradation in the UMCA, evolution of legal frameworks related to land management, capacity of the existing institutional network to implement Soil Conversation Act.

Major Issues Related to Land Degradation in the UMCA

Erosion removes top soil, causing the depletion of plant nutrients and organic matter that are present in the soil. It also decreases soil depth and water availability of crop lands. Continuous growing of crops on steep slopes without having proper soil conservation, may lead to washing off fine soil particles which help retention of plant nutrient in the soil, thereby reducing the crop yield. However, most of the farmers are reluctant to accept this natural phenomenon and attempt to enhance soil chemical fertility by applying over doses of fertilizers and manure[6]. Many studies revealed that most of the vegetable growers in the entire up country area apply inorganic fertilizers 2-3 times higher than the doses recommended by the Department of Agriculture[7,8]. Moreover, farmers tend to apply poultry and cattle manure at the rates of 10 – 20 t/ha/year, because of the high profits obtained from this farming system. Adding over doses of fertilizers and manure into intensively cultivated lands which are highly vulnerable to soil erosion eventually remove nutrients with sediments and accumulate them in surface water bodies, causing severe environmental problems such as deterioration of water quality by contamination with chemicals and sediments while reducing productive capacity of the crop lands.

Evolution of Legal Enactments Related to Land Management.

The legislations enacted during colonial period

Major laws related to land use, soil and water conservation and time line of their evolution over past 200 years are illustrated in Figure 1. The most striking point of the legislations introduced from 1840 to 1947 was focusing them on the change of the ownership of lands from traditional system to colonial property. The enactment of the Crown Lands Encroachment Ordinance in 1840 paved the way for the rapid expansion of the area under coffee and tea. Most of the lands suitable for coffee and tea were located on the hill slopes which were under forest or chena. The colonial government quickly realized the importance of such lands and brought in legislation imposing the requirement of legal titles for chena lands. The Ordinance defined the crown or state land and declared that "all forest, waste, unoccupied or uncultivated land was the property of the crown unless the contrary thereof was proved". The presumption in favour of the crown enshrined in this ordinance enabled the colonial government to gain control of vast tracts of land which were then sold cheap to those investing in export crops, principally coffee at that time[9]. It is estimated that more than 1.1 million acres of crown land were sold during the period of 1833 to 1886, and of this, nearly 230,000 acres were sold during the four years from 1840 to 1843, whereas less than 80,000 acres had been sold before 1840[10]. The lands that were taken over consisted of homesteads, village pasture lands, chena lands and forests, and were estimated to be about 500,000 acres[11]. Since plantation sector was developed rapidly, the demand for land appeared insatiable. Then the Waste Land Ordinance of 1897 was introduced to make more lands available to plantation interests. As a result, approximately 80% of the land in Ceylon (Sri Lanka) was owned by the state, while a large percentage of population remained landless. This situation closely linked with poverty among people, which in turn led them to unlawfully encroach state lands, often in ecologically sensitive places. Then, the forest ordinance was introduced by the colonial administration at the turn of the century (1907), to prevent encroachment of the remaining natural forest in the island. However, 75% of the dense forest cover that existed at the turn of the century had decreased to 20% by the year 2000, indicating a rapid depletion even within the period that the Forest Ordinance had been in force.

However, the growing pressure due to landlessness and the political changes that took place in the 1920s forced government to alienate some extent of lands to establish settlement schemes. As a result, the first Land Commission was appointed in 1927 to address the issues developed in the peasant sector due to growing landlessness and increased pressure on limited land resources. Based on its recommendations in 1929, the Land Development Ordinance of 1935 was enacted. It was a landmark piece of legislation that set the pattern for the future course of land development in the country[9,12]. State Land Ordinance of 1947 deals with the power of the state to grant, lease, sell or dispose of state

lands. This clearly reflects the government policies in the alienation of state lands. This is an ordinance which provides unrestricted power to the president of the country in the alienation of state lands. It also gives powers to local authorities to alienate the land for landless community in respective territories. However, the rationale of providing such grants has not been defined clearly.

As illustrated in Figure 1, the legislations enacted from 1840 to 1947 period mainly dealt with transformation of the ownership of the state lands. A part of the lands acquired through Crown Land Ordinance was alienated at the latter part of the colonial administration. Even though Forest Land Ordinance was introduced, the other legislations had little concern on land and water resources conservation.

Legal enactments on land management during post independence

After independence, realizing the importance of soil and water conservation, the then governments passed several acts to establish strong legal framework. Soil Conservation Act of 1951 was introduced to control soil erosion. It also paved the way for the establishment of Soil Conservation Division of the Department of Agriculture in 1953. The Act attempted to take care of soil resources in three different ways. First step was to get an assessment of the nature and extent of soil erosion. Then, the erodible areas were declared by government gazette notification. Finally, regulations and guidelines were established to control soil erosion. However, despite the soil conservation act, many other socio-economic factors forced people to encroach protected lands. Further, the institutional set-up that existed was not adequate for effective implementation of the Act.

The Land Reform Laws of 1972 and 1975 could be considered as the most important piece of legislation enacted in the post independence period. They set a ceiling on private ownership of land, at 25 acres for paddy land and 50 acres for other lands. Land in excess was expropriated and vested in the hands of state-run organizations. As a result, the ownership of the large-scale plantation sector was transferred to the government. Nearly 60000 ha of tea lands in the UMCA came under the ownership of government enterprises, causing drastic change of the management. The State Agriculture Corporation Act of 1972 was introduced to establish "National Agricultural Diversification and Settlement Authority" (NADSA). The main task of the NADSA was environmental protection. through land and water resources conservation. NADSA was later on renamed as "HADABIMA Authority". However, rapid degradation of tea lands was observed during two decades following the reform, mainly due to inherent inefficiency of the state management system. The extent of unproductive marginal tea lands in the UMCA was increased as a result. It clearly indicates that the Soil Conservation Enactments were not properly implemented even in tea estates under state ownership.

The Land Development (Amendment) Act of 1981 permitted granting certain extent of land holding to the allottees through a system of leasing, according to the concept of a free land market. However, the perpetuated land leasing system was replaced later on with grants called "Swarnabhumi" and "Jayabhumi" which provided more land security to the owner. It was another land mark of the evolution process of the land policy because secured land tenure system is positively associated with the adoption of soil conservation measures.

National-level policy-based approach emerged during the last two decades, aiming at sustainability of natural resources through participatory management. Three draft policies, namely, National Water Management Policy, National Land Use Policy and National Water Resources Policy, were presented during this period and were subjected to lengthy discussions in different fora. The objectives of these policies were to encourage integrated land and water resources development and management to ensure the sustainability of natural resources through soil and water conservation, preservation of forest and increasing forest cover in sensitive areas of catchments.

It is believed that land tenure security is one of the factors that encourage investment on soil conservation to upgrade the quality of lands. However, proposed policies have not considered it seriously. Hence, landlessness will remain, making people poorer in the long run. In the absence of alternative employment opportunities, state lands continue to be encroached by peasants who do not have incentives or resources to manage it in a sustainable manner[13]. Present policies do not stipulate efficient ways and means for capacity building of poor to move up on the economic ladder. Lack of political will and inefficiencies of the agencies at the ground level often hinder the implementation

of laws and regulations, especially on natural resources management. So far, the policies of successive governments have failed to address these issues. Since most of these issues directly link with poverty, a strong policy framework to overcome poverty and to remove barriers to empower the society have become urgent needs.

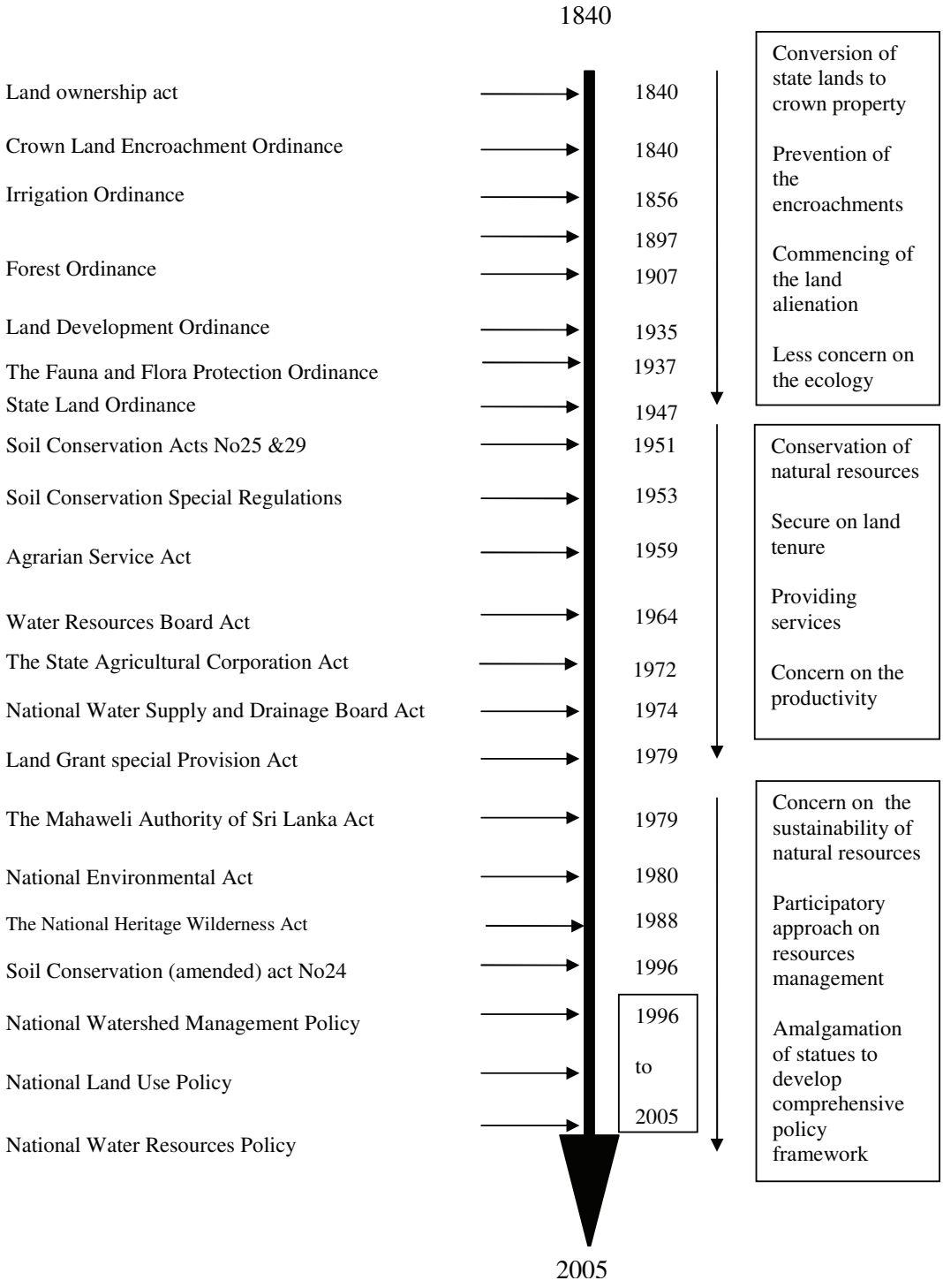

Figure 1. A time line indicating the evolution of the legal framework in land and water conservation in Sri Lanka

Soil Conservation Act No.25 of 1951 and 29 of 1953, 1956 revision and 1996 amendment

The major limitation observed in this act was that it deals only with the problem of soil erosion, and does not consider other aspects related to land degradation, such as over use of pesticides and fertilizers, inappropriate agronomic practices and non-agricultural human activities, including construction of roads, houses, etc. Therefore, the Act was amended in 1996 to make provisions to deal with a wide range of aspects in relation to the land degradation. Accordingly, the title of the act was changed as follows: "An Act to make provisions for the enhancement and sustenance of productive capacity of the soil; to restore degraded lands for the prevention and mitigation of soil erosion; for the conservation of soil resources and protection of land against damage by floods, salinity, alkalinity, water logging and drought." In addition, several new sections were inserted to strengthen the capacity of the Act [14].

Soil Conservation Board

Establishment of Soil Conservation Board was proposed in the 1996 amendment. The functions of the Board shall be coordinating research and other activities related to the enhancement and sustenance of the productive capacity of the soil, the restoration of the productive capacity of land which has been degraded due to the lack of proper conservation measures, conservation of water and watersheds and the prevention of soil erosion resulting from non agricultural activities. According to the Act, the Board should consist of Secretaries and Director Generals of relevant ministries and institutions. There are 12 ministries and 5 institutions named to represent the Board. The Secretary to the Ministry of Agriculture and the Director General of Agriculture were appointed as the Chairman and Secretary of the Board respectively. This seems to be a novel approach to enhance the coordination among line ministries and institutions. It is also useful to reduce the overlapping of responsibilities and focus more towards a common goal. Further, it provides opportunities for sharing of knowledge and resources to make the process more efficient. However, the Soil Conservation Board has not been established yet. The main reason is practical difficulty to meet all the members at once because of their busy schedules. One limitation of the Act is that no provisions have been given for the other authorized persons to represent the members of the board. The amended Act further makes provisions for the establishment of "Soil Conservation Fund" to defray any expenditure incurred by the Director General of Agriculture in exercise of functions and duties under this Act. Apart from the government funds, any donation or grant from local or foreign sources can be allowed for the proposed Soil Conservation Fund. However, the Soil Conservation Fund can be established only after the establishment of Soil Conservation Board. Therefore, lack of funds is one of the major constraints to implement the Act in the field level.

Institutional set up and power devolution of the Soil Conservation Act

The flow diagram in Figure 2 shows the power devolution of the Soil Conservation Act. The Natural Resources Management Centre (NRMC) of the Department of Agriculture of Sri Lanka is the institution responsible for the implementation of the Soil Conservation Act. Soil Conservation Board can play a significant role by delegating powers to line ministries and relevant institutions to implement the act more efficiently at field level. In addition, the section 5a in the amended Act makes provisions to delegate the powers to Divisional Secretaries as well.

Agricultural Instructor is the officer who has technical competence to implement the Soil Conservation Act in the field level. They are attached to the Provincial Department of Agriculture which is under the purview of the Provincial councils. However, NRMC comes under the central government of Sri Lanka. Since these two institutions are functioning in two different administrative frameworks, incompatibilities/controversies can occur in the implementation of the Act. With respect to the UMCA, there are very limited number of Agricultural Instructors to cover whole catchment which has an extent of about 3118km^2. The Environmental Officers attached to the Divisional Secretariats are another category of officers who can be deployed to implement the Act in the field. In addition, the service of Agricultural Research and Development Assistants (ARDA) can also be obtained, if the Soil Conservation Board is properly established. ARDAs are attached to the Agrarian Services Department which has no direct link with the NRMC. Apart from that, priority should be given to build up the capacity of the NRMC by increasing human and physical resources.

Another important aspect is the establishment of Soil Conservation Fund which can provide financial support for soil conservation research and other activities.

Conclusion

The degradation of land and water resources in the UMCA has been a multi-dimensional issue. Current issues related to this problem in the UMCA have been resulted from the weaknesses in the policies adopted in the country during the last few decades.

Many of the legislations related to natural resources management have bright objectives, but their implementation processes are not very much clear. Though soil conservation act was initially introduced in 1951, even after 50 years, its impacts are not satisfactory. The existing institutional set-up is not adequate to implement the Act in the field level, hence capacity building of the institutions with strong political will can be a promising measure for preventing the land and water resources from further degradation.

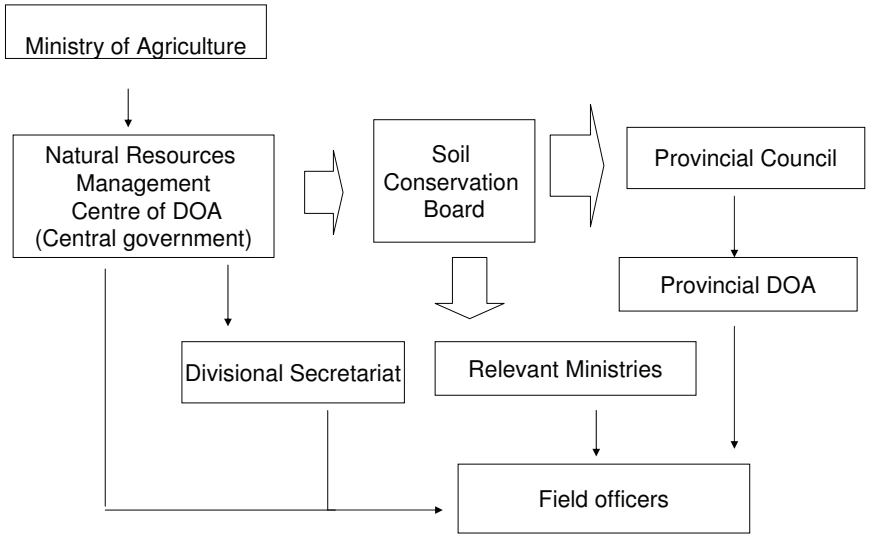

Figure 2. Devolution of powers of the soil conservation act

Acknowledgement

The financial support given by the Crossing Boundaries Project of the PGIA, University of Peradeniya, Sri Lanka, is greatly appreciated.

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