

Watershed Concerns and Recent Policy Formulations in Sri Lanka and Australia¹

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Abstract: Addressing the problems associated with watersheds in both countries is the aim of this paper as well as assessing the respective watershed policies. Attention has been drawn to specific economic, environmental and sociocultural considerations in the recent past. An interesting feature of the most recent policy developments is the tendency to follow a balanced approach to water resource development in either situation. In Australia, it is envisaged to follow a co-ordinated and sustainable use and management of land water, and vegetation resources on a water catchment basis. In Sri Lanka however, after a prolonged lull in policy approaches it is only beginning to prepare the framework towards a bearable watershed resource.

While accommodating a similar population to Australia, Sri Lanka in its tiny 270 miles stretch, has its people clustered on the moist southwestern third of the island known as the 'wet zone'. In Australia, where the main concentration is in the eastern part of the continent, there is heavy reliance on catchments of the Great Dividing Range and the associated run-off for agriculture and hydro electricity. In Sri Lanka, the catchments for nearly all its major rivers rest in the central highlands where most of its hydro electricity is

generated and water diverted for downstream purposes. Compared to Australia, Sri Lanka receives a relatively higher rainfall mainly from the monsoonal rains.

WATERSHED MANAGEMENT

Sri Lanka

Irrigation structures in the dry zone of Sri Lanka has a history of 2000 years, and thus, its first water management practices can be related to that time. However, in modern Sri Lanka, soil erosion and watershed problems were first recognised and addressed in the legislature in the early 1940's. But policy formulation did not take place till recent times before a major river basin development programme was initiated surrounding the Mahaweli river. Largely, towards the sustenance of this programme, it was inevitable some policy be introduced to manage the natural resources surrounding its catchments. This materialized only in the late 1989 when an interim report on watershed management was considered by policy makers in Sri Lanka.

Australia

The relevant legislation were first introduced in Australia in 1915, and its maiden water resource assessment programme began in 1963. Australia's main water management programme involves the Murray-Darling river basin that spreads over four of its major states.

More recently, a Bill was tabled in the New South Wales Legislature to implement total catchment management of the State's natural resources, namely, the co-ordinated and sustainable use and management of land, water, and vegetation resources on a catchment basis. Such policy developments followed the recent Federal concerns over a balanced approach to natural resources management in Australia.

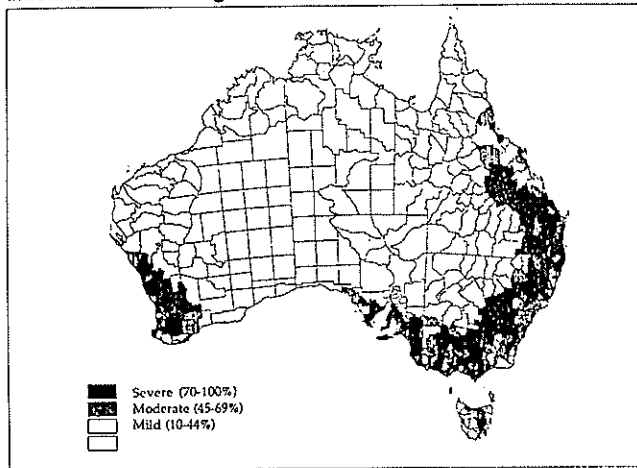
¹ Presented at the Subject Group S1.04 Technical Session on Geomorphic Hazards on Managed Forests, XIX World Congress International Union of Forestry Research Organisations, August 5-11, 1990, Montreal, Canada.

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CONCERNS

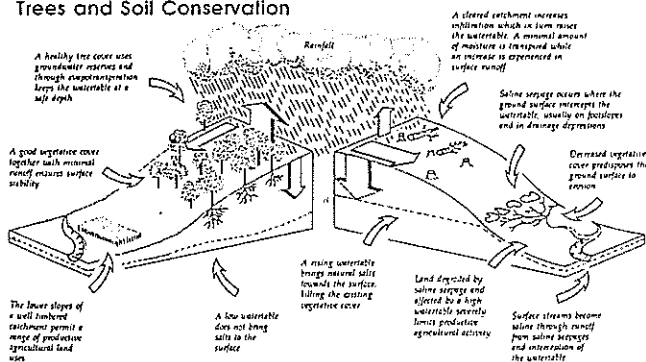
While deforestation in the catchment vegetation is common in both countries and excessive pressure on water resources, is there genuine concern in Sri Lanka and in Australia to ameliorate the situation and achieve a balance? The extent of tree clearing in Australia in the main catchment (Great Dividing Range) of the Murray-Darling Basin along the eastern coast is shown in the map. Sri Lanka, having carried out its last partial forest inventory in 1956, faces similar excessive deforestation in the main catchment of the Mahaweli and it is estimated that its forest cover has dwindled from 56 percent in 1956 to a mere 15 percent in the present times.

Extent of Tree Clearing in Australia Since European Settlement



In both situations, environmental flow management and flood mitigation remain unresolved policy issues mainly because of lack of information and the associated social and economic factors. It is in the same interest that it has become apparent those issues be addressed in a coherent policy frame for broad inter-temporal reasons. The sustainable frame still remains the same- the Trinity of Soil, Trees and Water (diagram 1).

Trees and Soil Conservation



FOCUS

In this paper, an assessment of the watershed policies of both countries has been carried out drawing attention to specific economic, environmental and sociocultural considerations in the recent past.

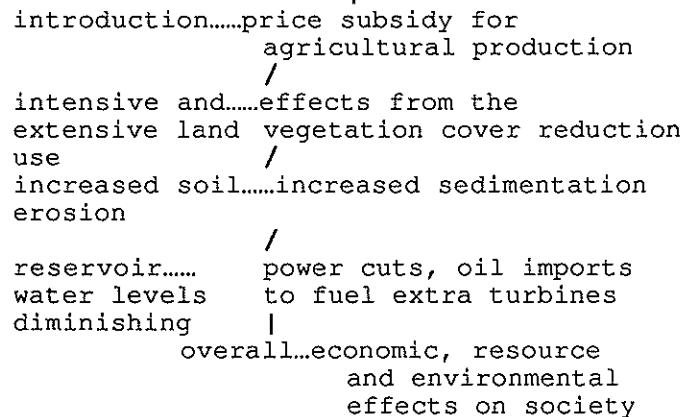
INSTITUTIONS and policy

Government policy intervention is two-pronged in watershed concerns. Direct and indirect. Direct policies are often regulating measures that affect a watershed.

Indirect policies converge on the integrated land-uses in an overall watershed region. Usually these measures do not fall within the scope of a particular policy consideration. It would be fair to say that in effect, indirect policy once applied has indirect effects on the watershed. These indirect effects are then moulded into explicit policy in the next application.

Indirect Policy

(a typical theoretical explanation of an effect on a watershed)



The political economy within which policies are formed, reshaped and applied is articulated uniquely according to the specific spatial condition in Sri Lanka and Australia.

In Sri Lanka, it is more centrally controlled and regionally applied. In Australia however, it is more regionally controlled and regionally applied. For instance, the role of the Central Government in institutional matters in Sri Lanka is authoritative in nature, whereas in Australia the role of the Federal Government in water affairs is more oriented towards a pro-active participation.

In managed and unmanaged water and watershed affairs, Sri Lanka's centrally dominated and directed policy is essentially a line functional system (not necessarily though they are efficient). In Australia, several regional (States) governments have different policy approaches, institutional structures in place, and legal frameworks in watershed settings (not necessarily though they are inefficient).

Consider the two-nation's main watershed regions. The focus is on the more naturally important as well as socially desired productive regions (i.e. Basins).

These Basins serve as their respective economic and ecological nerves where most social transformations occur, valuable currency exchange earned, more importantly food produced, the people productively employed and scarce and bearable water managed.

The recent phenomenon is not so much an optimistic and problem solving water front to both countries, but consist of overwhelming problem solving horizons. It is infact inheritance in both situations. The greatest tasks that both countries have aspired are the challenges faced with the accentuated environmental consequences from the continued resource degradation.

At cross roads are the favourite concepts for policy manipulation in flood mitigation, energy sustenance, water quality maintenance, total approach to balanced resource use and of course sustainability.

Despite the optimism, this brings us to a third set of policy application. Natural Resources Management Strategy (NRMS) for overall resource planning and management for a Basin wide system. The initiatives are (following the maps);

Sri Lanka- Mahaweli Accelerated Program

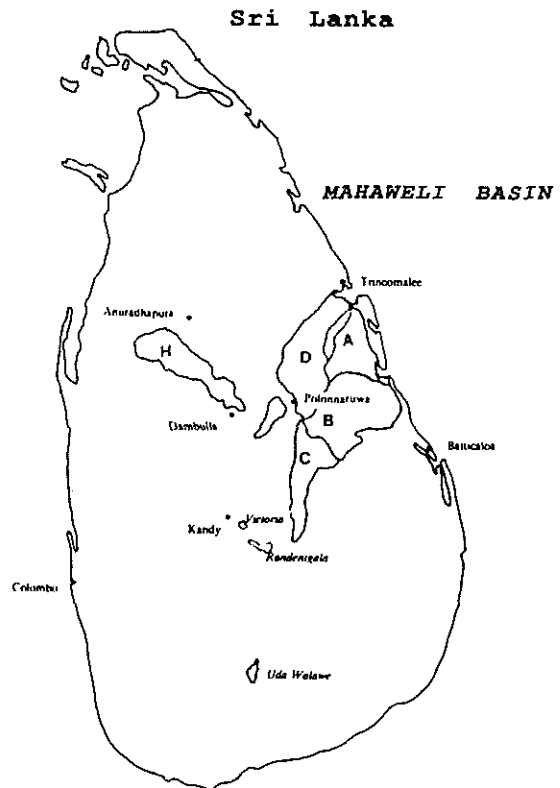
Australia- Murray-Darling Basin
Natural Resources Management
Strategy and Program.

Developments

Sri Lanka:

Optimum conservation of catchments is in pursuance.

Land Development Ordinance 1935.



Soil conservation Act follows after a private member Bill in the Legislature in 1940.

A considerable lull in the 1950's through to 1960's.

Absence of integrated Basin wide watershed analysis.

Lack of indepth study on detailed catchment hydrology.

Defficiency in resources and high level of resource degradation with plantation agriculture and private felling in the main catchment.

All Basins:

Rivers 103, total catchment area 59,217 sq km and number of stream gauging stations (River Gauging Stations); 68.

The Mahaweli Basin catchment 10,443 sq km and 18 RGS, number of run-off stations: on a daily basis- nil, monthly- 7.

Recent on watershed developments:

First Interim Report on Land 1985.

Second Interim Report on Land 1989.

