

I.A.2. Optimal Environmental Expenditure: The Role of Demand

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Renewable resources comprise an indispensable part of our environment. The interesting feature of this category is that it includes quite a few types of resources that also belongs to biodiversity, or ecology e.g., fishery, forestry, dairy and poultry farming cattles etc.; remaining within a regulated use the entire environment can be viewed as a renewable resource base. Indiscriminate use of such resources fast aggravates our economic resource base and degrades our environment. The ways out include spending some of our resources on maintaining and improving the quality of such resources. Then it much depends on the institutional structure whether adequate expenditure will be incurred by the decision-makers on improving quality of the environment. The present paper tries to explore the intensity of such expenditure in oligopolistic exploitation and social planning. The paper seeks answer for the following questions - If benefit is derived from a renewable natural asset and incurring some environment improving cost increases productivity, does private motive ensure optimal exploitation for the society?

Social planner's and oligopolist's intertemporal optimizations are compared with two constraining equations of motion coming repectively from the natural resource growth function and productivity effect (measured in terms of reduction in cost of harvesting) over time. It is shown whether private oligopoly overexploits depends upon a number of parameters of their market. On the other hand it is shown to be likely that under a set of not-too- restrictive conditions, social planning may lead to a steady sustainable state of the resource. The innovative view of the paper lies in two aspects of the treatment- (a) it looks at environmental decisions as productivity-rather than welfare directly- affecting action; (b) it explores the problem area of multiple state variables in the context of environment. The paper also tries to highlight that instead of pressurizing the oligopolistic profiteers of ecology, it is possible to monitor the exploitation of such a resource through demand management policies.