



Hans H. Ruthenberg-Graduierten-Förderpreis 2000/

Hans H. Ruthenberg Award for Graduates 2000

Bernd Hardeweg "Economic Approach for Evaluating Desert Locust Control Strategies"

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Summary

The main problem fields in an economic approach to the evaluation of desert locust abatement strategies were identified in the introduction and elaborated on in more detail in chapter two. A methodological framework was then developed with due consideration of these difficulties and the following results were obtained:

The rationale for public intervention in desert locust damage abatement is that - possibly - net social benefits of certain strategies exceed the private benefits. Then private markets fail to attain a Pareto optimal outcome. Social cost benefit analysis provides the tool to determine the welfare improving effect of public intervention projects or programs and operationalizes the rationale for the commitment of public funds. For an optimal choice, a social cost benefit analysis must be used to select the economically most efficient strategy from a set of technically efficient projects. For this reason, the scope of this paper has been augmented to cover not only economic approaches for evaluating desert locust control strategies but also for other public investments in abatement measures for desert locust damage.

Four different technical approaches for the desert locust problem have been discussed and their respective components of benefits and costs were identified. But an actual economic analysis needs to fall back on the technical input and output relations of the projects. Even for the current control strategy, there is still a regrettable lack of data, though. None of the off-site effects has been fully quantified, although qualitative results suggest that they are notable and affect the well-being of various stakeholders. To date, the available studies on preventive control fail to integrate the external costs and consequently overstate the net benefits. Other strategies have not been seriously considered and there is even less relevant information available.

Further, it was elaborated that welfare analytical approaches which do not account for the farmers' reactions to public damage abatement policies, fail to model an important dimension of the problem. Such a framework was used for the available cost benefit analyses of preventive control, however. Measuring the welfare effects of crop insurance schemes within such a framework would completely fail, since the main social benefit of insurance is an increased efficiency of resource allocation.

The proposed methodology for an economic analysis of desert locust abatement strategies is designed to overcome this shortcoming. This is accomplished by basing the analysis on actual farm data that are obtained from case/control studies. The behavioral component as well as the uncertainty involved can be captured by the proposed socio-economic survey techniques.

Finally, it is left to bio-technical, agricultural, social and economic expertise to devise the technically efficient projects for specific countries, regions or cropping systems and to evaluate them in economic terms. The necessary methodology is available and can be used to incorporate the full range of effects into an evaluation.

To avoid an emotional bias, the choice of an alternative public policy or investment should be based on economic efficiency grounds augmented by equity considerations. Anyway, a social cost benefit analysis is usually the prerequisite for a development proposal to be eligible for funds of donor agencies, because funds are scarce and should be placed in their best use. Putting it in the language of loss, the selection of only a second best project results in a welfare loss.