

# Towards a Holistic Distributed Policy Cluster to Prevent and Remedy Soil Pollution

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## INTRODUCTION

Adverse effects of soil pollution on human well-being and environment are well established. However, its generic types, effects and origins, extent and distribution vary widely. Therefore, its prevention and remediation calls for a coordinated and collective effort which could be successfully undertaken only at national and international levels. Such an action involves a successful implementation of an appropriate policy to prevent and remedy soil pollution.

## OBJECTIVES

This paper suggests a holistic approach to design and implement such a distributed policy cluster to achieve the present objective.

The scope of this undertaking includes a survey of the incidence and distribution of known generic and specific pollutants and the sources of their release.

Two areas must be developed:

- increase knowledge about the ill effects and remediation methods of known pollutants.
- identification of emerging soil pollutants, how to render them harmless and restore the affected soil.

## METHODOLOGY

- Standard holistic analytic technique has been applied throughout to ensure the completeness of the result.
- Relevance to the problem with reference to established principles of natural sciences has guided the survey of generic pollutants, rendering them harmless and their restoration.
- Mapping them onto sources of their release has been done with respect to publicly available information on agricultural and industrial practices.
- Policy design has been directed by the dual need to prevent and remedy soil pollution.

## MAIN RESULTS

There is a close correlation between the amount of the different types of pollutant released into soil and the degree of industrialisation and/or rate of material consumption in a country.

Therefore, the policy cluster must be developed according to country particularities.

Pollutants are divided into two categories:

- Bio-active soil pollutants: hazardous to human, animal or plant health owing to their toxicity or endocrine disruption.
- Obstructive pollutants: pollutants that make an area uninhabitable to its endemic flora and fauna by altering its chemical composition, or obstructing their access to some necessity like light.

Policy-makers need to know the extent and distribution of the two types of pollutants, their identities, and origins, prevention, neutralisation and soil restoration methods whose successful use is practicable (STEP 1).

To implement Step 1 surveys must be undertaken:

Survey of national sources of soil pollution and quantities discharged  
Survey on available information on long and short-term effects of soil pollutants on human health and the environment.

Survey of the existing policies to deal with soil pollution and their implementation strategies.

Survey on available pollutant-neutralisation methods and their stated effectiveness.

## Towards a distributed policy cluster to prevent and remedy soil pollution

- The suggested non-exhaustive policy cluster consists of policy elements distributed among all policies which are relevant to prevention and remediation of soil pollution.
- Implementation strategies of each policy to which an element in the cluster belongs, should actively support the achievement of the cluster's goal.
- Diverse policies in the ambience in which the proposed cluster is

embedded, should not conflict with achieving the present objective

- Compilation of a nation-wide survey on areas that need urgent inspection, research, and land restoration.
- Design a mechanism to assign research and technology development priorities with respect to its public benefit to procure state funding.
- Incorporation of learning about soil pollution into an obligatory environment studies in schools including agriculture and technical institutes and public education.
- Raise the awareness among public health workers and inspectors that soil pollution may pose a direct and indirect threat to health.

## CONCLUSION

Advantages of this approach include the possibility of immediate policy design and implementation, flexibility and the overview of soil pollution it could provide even when its implementation is somewhat less than adequate. It also strives to awaken a broader interest in the public, sometimes a useful motivator of political action.

In the implementation of the suggested policy cluster, two difficulties remain to be overcome, viz., real inter-institutional coordination towards a common goal, and procurement of the necessary resources.

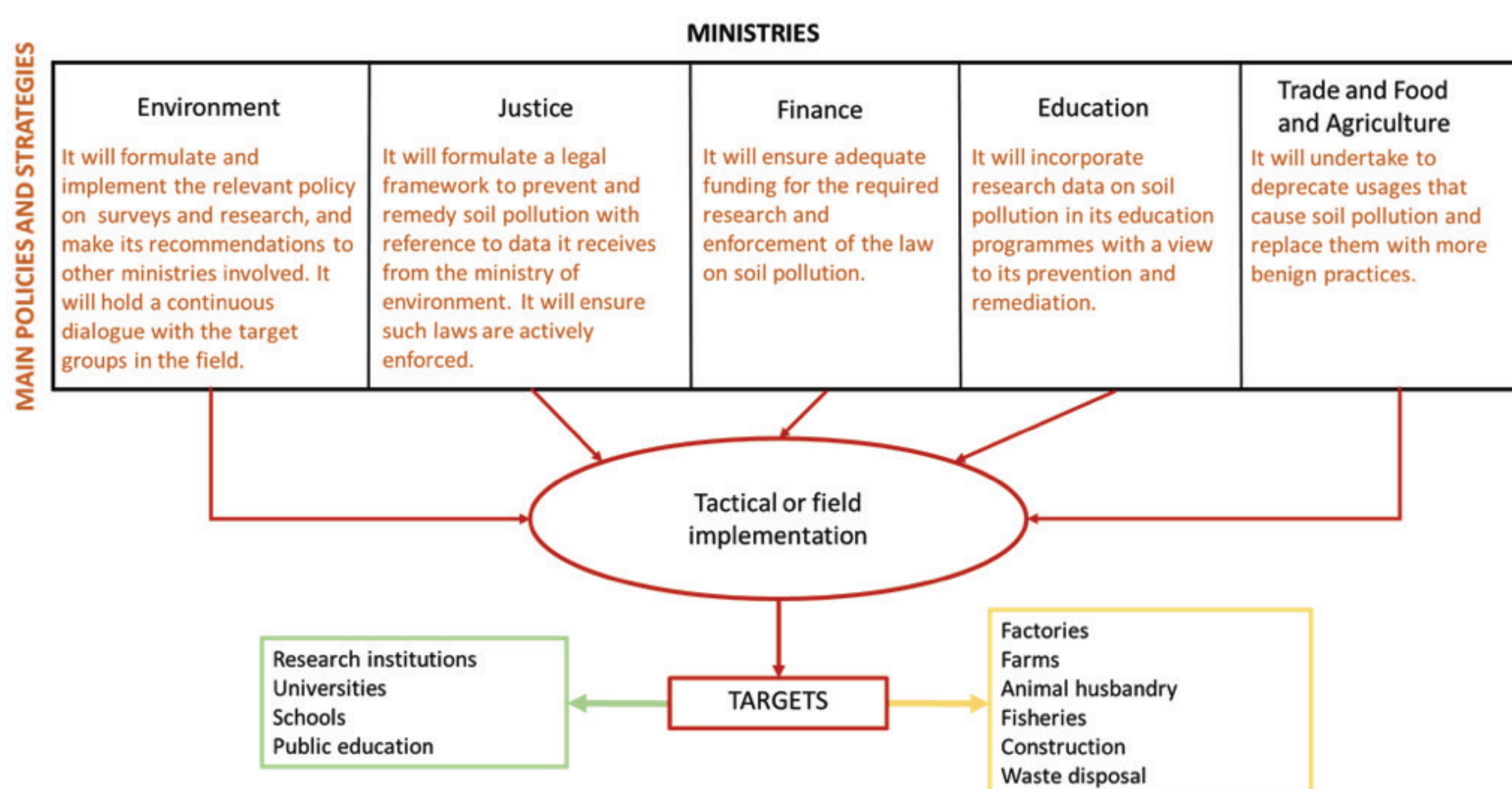


Fig. 1: A distributed policy cluster to prevent and remedy soil pollution

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