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Title	:	*Differences in Actual and Recommended Land and Water Use Practices in a Selected Upazila*
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1. Background

Planning for agricultural development in an area depends on the data and information available on climate, physiography, soil, and water resources and their correct use. The Soil Research Development Institute (SRDI) has prepared "Upazila land and soil resource use guideline" for a large number of Upazilas in Bangladesh. Popularly known as 'Thana Nirdeshika', these guidelines contain a rich description of physical and chemical information of land and soil. It also contains map units with soil chemical characteristics along with existing agricultural land use patterns, land and water use constraints and development possibilities, suitability of different agricultural land use and use of water resources as well as suggestions for soil and fertilizer management and other land and water management activities. Against this backdrop, this case study was an attempt to investigate, 1. To what extent the SRDI guidelines are being followed in the field, 2. What are the reasons if they are not followed? and 3. What are the constraints? The study area chosen for the present study was Narail Sadar Upazila in the southwest region of Bangladesh, and the case study was conducted in Peruli village of Tularampur Union.

2. Objectives

The overall objective of the present study was to conduct a case study of land and water use in agriculture in the context of the SRDI guidelines. Specific objectives of the study are as follows:

- To assess the current practices of land use and water management in agriculture.
- To investigate the constraints and opportunities in implementing land, soil and water use guidelines as proposed by SRDI.

3. Study Area

The study area chosen for the present study was Narail Sadar Upazila, which is situated in the northwestern side of Narail District, between 23o02' and 23o17'N, and 89o23' and 89o37'E. The total area of Narail Sadar is 37,226 Ha, and it consists of thirteen unions, one municipality and 224 villages in 180 mauzas. The case study was conducted in the Peruli village of Tularampur union of Narail Sadar Upazila. Tularampur union has an area of 3,318 Ha and is situated between the Afra Khal to the west and the Chitra River to the northeast. Natural highlands define the eastern boundary and a local road defines the southern boundary. The village Peruli has an area of 195 Ha and lies within the Sia pagla subproject located in the Narail Sadar Thana. The Sia pagla subproject is an FCD project implemented by LGED. The purpose of the subproject, like other small scale projects implemented by LGED, was to increase rice production through road/embankments and water control structures (regulators, sluice gates, etc.). In total, there are six villages in this subproject area: Peruli, Chamrul, Araji Mitna, Barmara, Bakshadanga, and Chahar Baliadanga.

4. Methodology

The methodology adopted in the study can be categorized in three classes: 1. application of participatory rural appraisal (PRA) tools to get an understanding of the land and water use and management systems, including development potentials and constraints; 2. collection of secondary data; and 3. analysis of the information from PRA and secondary information in the context of research objectives.

5. Research findings

There is a lack of communication between the Soil Resources Research Institute and the Agricultural Extension workers. This was reflected in the Block supervisor's not apprising the local people of the existence of the guidelines or providing any suggestions as per the guidelines. There are both, matches and mismatches between the present agricultural practice and the practice suggested in the guidelines. The SRDI guideline is found to be useful, which is manifested by the farmers unknowingly following many of the suggestions made in there.

There are three important factors (or constraints) that seemed to affect the choice of cropping patterns by the villagers:

(i) Physical factor: In most cases, the villagers follow a crop combination that suits their local physiographical and hydro-meteorological condition;
(ii) Economic factor: The villagers' choice of crops is affected by their inability to afford expensive irrigation devices and fertilizers, and profitability of crops (including crops that require less labour);
(iii) Institutional factor: The villagers' choice of crops is also affected by institutional constraints, such as 'timely' availability of fertilizers and/or seeds in 'required amounts'.

There are physical constraints in implementing the suggestions in all land types. The villagers' choice of crops is affected by their inability to afford expensive irrigation The villagers' choice of crops is also affected by institutional constraints, such as availability of fertilizers.

6. Discussion

Is SRDI guideline useful?
As it was found that the villagers were not aware of the guideline, an obvious question that arises is: Would the farmers have followed the guidelines had they known about it? The answer is both 'yes' and 'no'. The SRDI guidelines were found to be useful, but the guideline is not complete in the sense that it does not cover the high lands areas. There are some site specific physical constraints which are not envisioned in the guideline. The guidelines need to be updated periodically.

Suggestions for water management

The conjunctive use of surface water and groundwater is suggested in general for the Narail Sadar Upazila. This is in line with the Government policy of balanced use of surface and groundwater, as outlined in the National Water Policy (MoWR, 1999). However, there is only one LLP in the study area. There is a scope for increasing the number of LLPs. LLP use from the Afra River may be increased by taking appropriate measures to line the sandy soil near the LLP sites.