Sample Problem Statement for CoE in IT Applications in Healthcare & Agritech

Information and communications technologies (ICTs) can play a critical role in improving health care for individuals and communities, while also providing the capacity to improve health system efficiencies and prevent medical errors. Computers and communications attributes can be networked to build systems for moving health information. Informatics is yet another integral aspect of IT. Information technology applications in healthcare can include Mobile Apps for Information / Online Doctor Appointment Booking System, Medical advice, Nutrition, Blood Donation, etc.

Agritechnology is equally important for this location. Agri start-ups may address issues/problems in Supply chain, Finance etc. IT application may be used for creating Agroecological farming, where the farming strives to create stable food production systems that are resilient to environmental perturbations such as climate change and disease. The only way to achieve this goal is to go beyond thinking of farms as linear systems in which inputs (acreage, fertilizer, pesticides, etc.) influence output (food yield), and start treating farmland as complex webs of ecological interactions.

Some of the sample problem statements where IT Applications in Healthcare & Agritech can make a difference are given below.

1. Tele-medicine facility for State of Sikkim

The health care facility in the State of Sikkim is concentrated in the capital city of Gangtok. The difficult terrains of the state added with the lack of expert Doctors makes the accessibility of healthcare difficult. The health care facility is in an urgent need to move beyond the capital to all locations in the State. Tele-medicine can be a solution, which will involve technology for video conferencing between doctors and patients and transferring of medical data in real time or through store and forward mechanism. Transmission of medical records of Clinical information, Diagnostic Test, Radiological images are possible with integration of available technology and bandwidth.

2. Online service for dispensing of medical report

Online service for dispensing of medical report viz., x-ray, blood samples report etc. directly into mobile apps, which are developed in CoE can help in reducing the wastage of time in travelling and collecting the report. This will also help in keeping track of the patient's medical history.

3. IT application in distribution of organic fertilizers

Though organic agriculture is a sustainable alternative to traditional agriculture, the limited availability of commercial biopesticides and organic fertilizers end up as barriers to the commercialization of biological products. On top of this, Sikkim being a hilly terrain, making these organic fertilizers available to the consumer, enquiring availability from remote places etc. becomes major hurdle many a times. Information sharing in proper way and correct time can be beneficial to all. Using of IT application for making all these available at correct price and correct location will make organic farming a lot easier and viable.

4. Farming Water Management

Rainfall distribution in Sikkim is not uniform over time and area. Hence, they have high rainfall as well as drought prone areas. Also, being a hilly state with varying degree of slopes, constructing big irrigation canals is also not feasible and entails a very high capital cost & maintenance cost, and since the majority of farmers are marginal farmers, they are not able to provide irrigation to the crops through costly means. Springs, both seasonal and perennial are the main source of available water. Availability of abundant stream water during the summer allows for growing of paddy which the farmers carry to their field through temporary channels. Otherwise almost all the crops are grown on rain conditions. The topography again is a big constraint in developing a suitable water application method. Design/ layout of drip irrigation, sprinklers etc., are difficult and entail high cost due to difference in pressure head in every terrace/ field. If used in proper way, IT application may be solution to these problems.