Brief on Programm for Advanced Numerical Irrigation (PANI)

Mobile Application for Irrigation Schedule

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Arusha, Tanzania
Background and Rationale

- Remote sensing data can be translated as advice to farmers on the ground to help inform their decisions about farming methods which leads to better crop yields, higher quality produce and possibly more sustainable practices for the farming communities.

- Irrigation in Bangladesh is still managed in a very traditional manner without considering scientific data on soil and weather which increase cost of farming and also lower productivity.

- CIMMYT and BIID collaborated to integrate a mobile apps to make the service more easy to access by the relevant actors (LSP, Farmers etc.) since access to mobile phone is very high.

- Transformation from research to extension at field
Landing Page

Programm for Advanced Numerical Irrigation

Welcome to Irrigation Scheduling App!
This App is designed to provide irrigation schedule and alert for farmers and LSPs.
Please enter to access the service.
Select User type

There are two types of users.

1. Farmer
2. LSP (Local service Provider)

Select the user type
Farmer Interface

This is the Login page for registered farmers. They can login here by using their mobile number and require password.

For New User, farmer need to register (Next Slide)

N.B. Internet connection is required for this process.
Farmer Registration (New User)

New users (farmers) need to register by filling up the following:

i) **Mobile number** field to enter mobile number in to this field.

iii) **Password** field to enter password in this field.

iv) **Confirm Password** field to retype the password.

v) **Name** field to enter username in to this field.

vi) **Current Address** field to enter address in this field.

vii) Press **Register** button is for registration in this system.

*Once registered, the farmer will be routed to the Log in interface*
Forget Password (Farmer)

In case, the farmer forget the password, s/he may recover the password through the following process –

i) Phone number field to enter Phone number.

ii) Press Submit button

Farmer will receive Password through an SMS (Text Message)
After log in, the farmers will be landed to this page.

Here the farmers can ADD FIELDS ON MAP, MANAGE FIELDS. (Details in Next Slide)

Field wise LSP will be selected by the farmers in the Manage field option.

By using **CALL LSP**, farmers can call specific (Selected) LSP.

By using **MESSAGE LSP** farmers can send message to the selected LSP.
ADD fields on Maps

After clicking **ADD FIELDS ON MAP** farmers can see a map where they can set the location of their fields and submit.

i) Enter a name in the Field name field
ii) Select a crop in the CROP List field
iii) Select LSP from the LSP List field (Distance of the LSP will be shown)
iv) Set the sowing date in the Sowing Date field

Press SAVE button to save the information.

Farmers can add multiple fields.
Manage Fields

In **Manage fields** options Farmers can see the number of fields in the screen.

After clicking a single field they can see more details about it.

They can **UPDATE** or **DELETE** the information. If they wish they can also **OFF / ON** the irrigation.
LSP Interface

LSPs need to register and use the Log in page to avail the service. Press New User for registration.

This is the Login page for registered LSP.

LSP can login here by using their mobile number and require password.

N.B. Internet connection is required for this process.
LSP Registration

New LSP can registration in this page by filling the form.

i) **Mobile number** field to enter mobile number in to this field.

ii) **Password** field to enter password in this field.

iii) **Confirm Password** field to retype the password.

iv) **Name** field to enter username in to this field.

v) **Current Address** field to enter address in this field.

vi) **Type of Pump** field to enter types pump the LSP has.

vii) **Capacity of Pump** field to enter the capacity (In Cusec*) of pump the LSP has.

Press **Register** button for registration.

*1 Cusec=28.32 Liter*
For **Forget password (LSP)**

If the LSP forget the password, s/he can recover the Password through the following process –

i) Enter Phone number in the **mobile number** field.

ii) Press **Submit** button to submit the mobile number

The LSP will receive the Password through text message (SMS).
LSP (Home Page)

This is the home page for the LSP.

LSP can **VIEW MAP, VIEW LIST, VIEW SCHEDULE** here.

By using **Support** button, they can also call or SMS.

A dedicated number at BIID is set in this support system.
In this option LSP can see the maps in which the fields are located.

They can see multiple fields which are assigned for him.
In this **VIEW LIST** LSP can see the numbers of Fields.

There is a calling option and LSP can call the Farmers and discuss about their schedules (Based on suggestions send by the system) using this option.
In this option LSP can see how many Farmers assigned for them.

If there is no assigned field LSP will see the screen like picture -1.

Or if there is any assigned field, after clicking the Field name LSP can see the Field details and call the Farmer. (Picture 2)
Irrigation Service Delivery

Once the Farmer enter data (including photo of land) and LSP is registered, the Server analyze the data and send a recommendation to LSPs mobile about the irrigation schedule with quantity of water.

After the recommendations (Water volume, Date / Timeline) of irrigation, the farmer and LSP will set the irrigation scheduling and may agree for the timing and LSP will ensure irrigation for the selected farmers.

Farmers and LSP can reschedule the timing / date as convenient for them.
Information Note

• Field name, Field map, Crop name, LSP name, Sowing date all these information's directly saved to the server.

• The Server will analyze the maps, weather and other information's for setting the irrigation date.

• Every request from farmers will be updated within 6 hours in the server and notification will be send out once in a week to both farmers & LSP.

• In the notification SMS, Farmers and LSP can see the details irrigation information.

• In any case if the irrigation date is canceled by Farmer or LSP. They can rescheduled the irrigation date.

• A dashboard (LSP list, Farmer List, Schedule etc.) is available at the Admin panel of BIID
Business Model

There are high potential to develop a sustainable business model as well as there are challenges.

Opportunities

• Water is getting scare in many of the country
• Willingness to pay for such services are always very high, already farmers pay for the services (Flat rate and crop sharing)

Major Challenges

• Irrigation is subsidized heavily by government
• Behavioral communication towards use of proper irrigation

Strategy

Partnership (PPP) will be the key strategy to promote PANI as a Social Business Solution

Bundling of service along with different facilities like credit, solar
Proposed Business Models

CIMMYT and BIID considering multiple options for making the PANI solution (Irrigation Scheduling) to roll out and sustainable. These includes –

a. Partnering with the irrigation service provider at local level also with the other service providers like solar energy supplier for irrigation, Pump manufacturing companies, farmer groups, NGOs.

b. Introducing the service within the government agencies responsible for irrigation and adopt in their service basket

c. Commercialization of PANI as VAS (Value Added Service) through telecom operators
Sustainability: *Happy Face of Farmer*
Thank You

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