

## 2C.

## Case Study 3

**Project Name:** Nano Ganesh

**Organisation:** Ossian Agro  
Automation Pvt. Ltd.

**Location:** Maharashtra

**Project since:** 2008

**Project URL:**  
[www.nanoganesh.com](http://www.nanoganesh.com)

farmers or irrigation operators in operating the pumps viz. fluctuations in power supply, difficult terrain, fear of animals on the way to pumps, hazardous locations of the pumps along rivers or water storage beds, shock hazards, rains etc. Also, in the rural water supply schemes, there is no proper co-ordination in the water tank and the water source. An irrigation operator needs to physically present frequently for on/off and monitoring the water levels of the tank.

### Description:

Nano Ganesh, launched in 2008, is a mobile-based wireless remote control and alarm system for the water pumps, appropriately designed taking into consideration the unfavourable conditions in the irrigation zone. It seeks to provide appropriate wireless automation for efficient operations of irrigation systems.

The need of Nano-Ganesh aroused from the routine problems faced by the

The project has multiple work flow and different systems used individually or in combination: 1. Remote control for the water pumps: Nano Ganesh (Pumps): A farmer or an irrigation operator can monitor and check availability of the power at the pump, can switch the pump on/off, and acknowledge the on/off status of water pump from any place. 2. Wireless Alarm of tank water levels on the mobile phones: Nano Ganesh (Alarm): A Wireless alarm of



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water level is being used by an irrigation operator where a message of “Water Tank Full” or “Water Tank Empty” is displayed on his mobile phone when he is busy at his work. This helps him instantly control the pumps as soon as the tanks are full and avoid a huge wastage of water and electricity.

Nano Ganesh is specially designed to be robust to perform efficiently in the rural atmosphere where problems like voltage fluctuations, shock hazards, open wiring and marshy terrain are common. To make this system more accessible to the farmer fraternity, Ossian Agro deploys basic phones. All that Nano Ganesh needs is a low-cost wireless connectivity with voice transmission and Dual Tone Multi Frequency (DTMF) transmission available in most handsets.

Using Nano Ganesh connected to the existing starter along with a low cost mobile phone, 1. A farmer can switch on / off his pump with a mobile or land line phone from anywhere. 2. He can check an availability of the power supply near the pump end. 3. He can acknowledge the on / off status of the water pump. 4. An operator can receive an sms alarm on his mobile phone as soon as a water tank is full or empty.

**Result:** So far, 10,000 remote controllers are in use and have improved the livelihoods of 40,000 people with 1,000 rural technicians getting an additional source of income; 180,000 m<sup>3</sup> of water, 1080 MWh of electricity, 180 m<sup>3</sup> of fuel, and 18 m<sup>3</sup> of soil saved in the

year 2010 by installing 2,000 Nano Ganesh sets; \$720,000 in saved labour costs in the year 2010.

### Project Strength, Weakness, Improvisation & Scalability

1. For the millions of inefficiently operated irrigation systems in agriculture and drinking water schemes, Nano Ganesh seeks to provide a timely control and monitoring of pumps via a mobile-based remote controller which is low cost, simple, easy to install and repair by illiterate villagers, and built for the local needs in rural areas with no user constraints such as age, language, education, technical experience or gender. The project is environmental friendly and safe.

2. In order to scale up the project requires advocacy and education programme. Also it needs sales and marketing to expand the social business. Government intervention is required to draw investment and policy change.

3. It needs to be researched and analysed as to why rural investments are missing in such mobile-based programmes. External research is required to know why the project is not being scaled up.

4. The cost aspect needs to be monitored: money spent, cost of model, cost of creation and recurring cost. This is surely to help in optimum project design and implementation with judicious resource allocation.