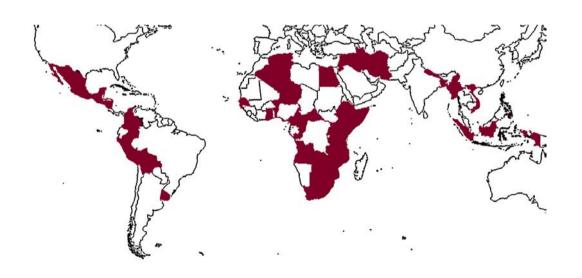
## Sapienza for International Development Cooperation

Strategies, Projects, Actions

edited by
Carlo Giovanni Cereti and Francesca Giofrè



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### Sapienza for International Development Cooperation

Strategies, Projects, Actions

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In copertina: elaborazione grafica a cura della prof.ssa Francesca Giofrè.

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# The Protic Project. Outcomes from a ICT4D Action Research in Rural Bangladesh

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#### **Abstract**

PROTIC (Participatory Research and Ownership with Technology, Information and Change) is a large-scale ICTs for development (ICT4D) project in Bangladesh (2015-2019). It is international and interdisciplinary in scope, led by the Monash University Centre for Organizational and Social Informatics (Melbourne) in partnership with Oxfam Bangladesh. PROTIC also involves a number of Bangladeshi universities, including the University of Dhaka, and local NGOs, sociologists, community development workers, IT experts and a number of researchers and practitioners working at the crossroad of disciplinary domains.

The results of the project are complex. In brief the project has had direct impacts on food production and villager sustainability, and affected researchers' views on how such impacts via ICT information should be researched. It has also strongly influenced Oxfam's thinking about ICT4D and the place of information and knowledge flows and transactions in its own practice.

In this contribution we introduce our approach to ICTs in community and development projects, and outline the ICTs scenario in Bangladesh. The PROTIC project is then discussed, and finally, some examples and results from the project will be used to critically illustrate how research and practices are intertwined in cooperation activities.

#### 1. Othering processes and faulty analogies

Community informatics (CI) and Information and Communications Technology for Development (ICT4D) are two closely related areas whose projects focus on the social appropriation and transformative approach to ICTs and the design of information systems to meet the needs of communities. The first question CI and ICT4D projects often have to face is: do 'they' really need ICTs? That often actually means: aren't they people in poverty who have more important priorities in their lives? And, do they have the resources to take advantage of technologies?

These questions are not easy to answer. Indeed, ICT4D projects are not exempt from critiques related to techno-determinism, neo-colonialist attitudes, the commodification of communities, and concerns about power imbalances. These critiques require serious consideration of the way the actors that are engaged in ICT4D projects are represented and perceive each other. Defining 'who we are' and 'who they are' serves basic psychological functions but may also lead to justifying and maintaining social inequalities, defining social causality based on stereotypes, even beyond our own consciousness (Tajfel, 1981). This may result in faulty analogies between 'our' and 'their' needs, or biased perceptions of irreconcilable distance between the 'developed' and the 'developing' countries. ICT4D projects based on these implicit assumptions often express a techno-salvific and prescriptive attitude towards the way others *have* to be empowered and the role that ICTs must play in this mechanism.

On the contrary, in our opinion, the effectiveness of an ICT4D intervention depends on an emic approach to culture and on its capacity to build locally meaningful and sustainable interventions (Sarrica et al., 2019). We argue that it is fundamental to recognise the situated cultural, economic, technological capabilities while at the same time recognising the structural inequalities that make people struggle with basic needs. Local needs, community agency, and situated meanings are thus as important as structural inequalities and materiality in building the relationship with technologies. In this sense, ICTs are neither the solution nor as one-tool-fits-all, but a platform that increasingly mediates and enables particular aspects of development (Heeks, 2016). Moreover, the constant change in platforms means that we cannot even generalize about ICTs. Following Donnerwe should rather consider that ICT4D is engaged with "multitudes of Internets [...] appropriated, shaped, and reinvented by their users in an innumerable variety of contexts and cultures" (Donner, 2015, p. 5).

The initial questions should thus be rephrased into: how can this project, which includes ICTs, contribute to foster well-being and capabilities at individual and community level?

#### 2. ICTs in contemporary Bangladesh

Novak romantically depicted Bangladesh 'not so much a land upon water as water upon a land' (Novak, 1993, p. 22). Bangladesh is one of the most crowded, young and fragile countries on the planet. It has half the size of Italy and a population of 160 million citizens, mostly living in villages. In remote areas for villagers the only means to travel is by foot, rickshaw, or slow, dangerous buses. Private cars are rare. Boat travel is often slow and expensive, and in the dry season settlements become inaccessible, except by inadequate roads and tracks. The country's delicate ecosystem is also affected by floods, cyclone and earthquakes as well as by human activities that affect food security and livelihoods.

In this context, ICTs significantly contribute to managing ordinary needs and emergencies. The reaction to portable network since the late 1990s has been bewildering (Aminuzzaman et al., 2003). As indicated by the BD Telecommunication Regulatory Commission, cell phone subscriptions raised from 133 (Dec. 2015) to 162.5 million (Aug. 2019). Most individuals still have old mobile telephones. At the end of July 2019, more than 90 million people also accessed the Internet at least once in the preceding 90 days period by mobile phones with only about another 5.7 million via an ISP linked to a PC or laptop. In this unique situation, NGOs and the Government consider mobiles as tools for developing a knowledge-driven society (Rashid, 2017), however, social and interdisciplinary studies that add to technical and engineering competence are needed to achieve this goal beyond aspirational discourse (Hasan, 2016).

Access to information and to mobile phones is also a gendered matter in Bangladesh. A recent report highlights that 82% of adult males own a mobile phone, in contrast to 55% of women, and that 34% of men access mobile Internet services in contrast to 13% of women (Rowntree, 2018), and rural culture frowns upon women's independent communications. Consequently, gender has to be considered as central to all discussions about improving life opportunities (including ICTs) in Bangladesh (Guhathakurta and Banu, 2016; Laizu et al., 2010).

Bangladesh-focused ICT4D research argues that access to mobiles can have positive outcomes such as reductions in travel times and isolation, increasing material affluence, improving health, education and livelihood. (Alam, Yusuf, and Coghill, 2010; Elder, Samarajiva, Gillwald, & Galperin, 2013; Rahman, Abdullah, Haroon, & Tooheen, 2013). And, despite known cultural constraints, studies suggest that phones have begun to have an impact in at least 5 areas of rural women lives: social security; social status; economic mobility; disaster and emergency response and, bridging the digital divide.

#### 3. PROTIC a project with women in rural Bangladesh

Bearing upon these premises, the PROTIC team works with rural Bangladeshi communities, with a specific focus on engaging women, with the aim to improve their agricultural and related knowledge and skills, reducing dependency on others for information or support.

At present, the project has been working in the far north-west of Bangladesh and in the southern mangroves' region, though a third community in Sylhet has been involved at a later stage of the project (Fig. 1). These areas represent different ecological and economic systems, which are affected by a variety of problems and challenges. For

example, the north-west area is heavily dependent on river flows and crops, whereas the south community traditional aquaculture economy and small farming are increasingly affected by climate change and the spread of shrimp farms. Nearby villages have also been considered, in order to take into account the spread of ICTs in rural Bangladesh beyond PROTIC.

PROTIC provided one hundred women in each project village with smartphones and, more importantly, supported locals with specific training on how to use them. Training has



Fig. 1. Protic communities location.

been developed by local NGOs that have long-term engagement with the communities, and are structured around community events, oneto-one explanations and monthly meetings which provide a community-based feed-back loop for the project.

PROTIC has developed Bengali-language interactive and localised information services which provide timely, accurate, and reliable information including crops, livestock, fisheries alerts and advice, localized climate information, and disaster alerts. As a detailed example of grass-roots action, SMS information was provided alongside training in animal vaccination, allowing for mass inoculation of ducks in the village in areas that are chronically affected by staff shortages in veterinary services. PROTIC also addresses social entitlement rights and benefits, and health issues with participants, providing access to access to information that enables women to improve their and their communities' well-being.

A mixed method approach has been implemented to evaluate the transformations in the communities involved. The data collected includes quantitative surveys, in-depth interviews, notes of meetings with project staff, monthly meetings, as well transcripts and ethnographic observation of Internet use and multimedia products created by the villagers themselves (Sarrica et al., 2019;).

Researchers and academics associated with the project regularly visit or spend time on site, meet with women involved in the project and with project staff, engage with local NGOs, main NGOs and policy makers. Their goal is not just to collect data but to discuss next steps of the projects with the community involved, and to understand with stakeholders and policy makers whether and how the outcomes of the project can be scaled-up to meet the needs of other Bangladeshi communities.

#### 4. Outcomes with local community

A comparison of quantitative self-reported well-being shows that whereas project and control village did not show significant differences as regards well being perceived one year before the data collection (T1), the respondents involved in the project perceived a significantly (p<.01) higher sense of well-being (T2) and felt even more optimistic than respondents from control villages when asked to foresee their situation a year from now (T3).

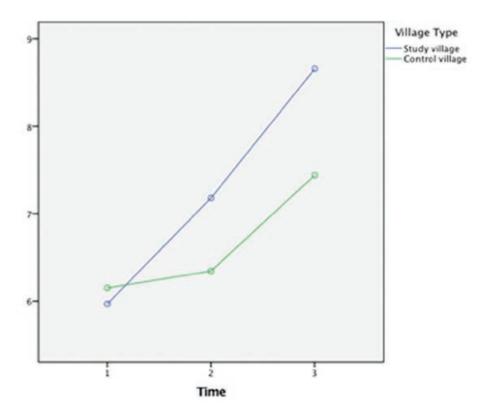


Fig. 2. Perceived overall well being in Study and Control villages.

Note: GLM - repeated measures. T1: How did you feel one year ago? T2: How do you feel now? T3: How will you feel one year from now? Scale range 1 to 10. Increase in Well Being is also significantly (p<.01) higher for study village than control village for  $\Delta$  T1 – T2 and  $\Delta$  T2 – T3.

The qualitative data clarify that because of training and support, PROTIC participants acquired new competencies and felt more entitled to use mobile phones in their everyday practices:

My communication network developed more. Earlier I rarely used my husband's phone. But now I can call anyone. It is also helping my family. I can talk to the teachers of my children. I can communicate with my parents in India. Earlier I was not comfortable to talk with them on my husband's phone.

Some women had come to be seen as 'information hubs' for the community, thanks to their multi-media skills in sharing images and capacity to contact the 'right person'. They contacted the call centre to get trustworthy information about agriculture, they organiseed transportation of people and goods, and they felt entitled to call an ambulance:

When anyone from our village needs a solution for agricultural or poultry related problems, then they come to me and I ring the call centre. If I need any transportation, then I can call auto or rickshaw van pullers. I haven't called for an ambulance yet.

Significantly, women we met felt empowered, in a way that differs from the hyper-individualised empowerment familiar from the Anglo-American tradition of research. They were part of families and larger collectivities:

My mother was also surprised at how I am managing this! This is to my credit.

#### 5. Next steps with local communities

Even though the use of smartphones is still limited to the basic calling functions, it is possible to foresee that the strong visual culture in the engaged communities will favour a shift to visual and multimedia communication. The shift from painting informative panels, walls or public billboards to posting photos (e.g. on Facebook) is an emerging practice, and we expect that women will be interested in developing this skill in the near future (Fig. 3).

When the vegetable garden or crops field get spoiled, then **I take photos** and send them to the call centre. They give us many suggestions.

Increasing and giving space to women's agency is probably one of the main future targets. Anecdotally, some women suggested a sexual health app for young women of the community, and this shows their capacity to translate the competences in the project to other new domains (i.e. health). Increased literacy and the use of visual media also provided us with preliminary insights about citizens' journalism or for building local archives, which will for the first time collect and preserve information about matters that are relevant for the community. In this sense, the next step is working for the project to be sustainable after its end: top-down information will be, in our expectation, substituted by locally-owned knowledge about agriculture, farming, fisheries, human rights and any other issue that is perceived as relevant, by locals and for the locals. In fact, a very simple form of this is the use, by a number of women, of notebooks to keep notes on the information and knowledge that they have acquired for the project. Given the collective orientation of the community, we expect that some women and the local NGOs involved in the project will be increasingly recognised as mediators between the local needs and the possibility offered by the web.

Some of the villagers have suggested that in the future, perhaps, only a few 'specialists' in their local hub will need to have high-level device phone skills and others will rely more on personal contact in an information centre, memory, personal networks, and paper documentation.



Fig. 3. Visual culture, from painted panels to Facebook.

At the same time, this enhanced and expanded communicative network brings new problems, concerning, for example jealousy within and between villagers, the use of the Internet as a new space for reproducing power inequalities, and cyberbullying and harassment and identity theft. Of course, none of these problems are particularly original and are known in any country. But here, we see the transfer of virtual problems into village environment where the effects can be especially distressing and problem-solving complex. Project staff will need to work harder with local participants to achieve more responsive and responsible forms of ICT literacy, including a capacity to engage in protective behaviour.

#### 6. Outcomes and next steps with the research communities

A project like PROTIC brings transformations to all the actors involved, including researchers, policy makers, practitioners. From this perspective, working in the field poses continuous challenges to the ways we interpret participatory approaches and the meaning of empowerment.

Are the women involved really the ones who drive this change, or are they still perceived -and perceive themselves- as beneficiaries? Digitalization and Women's Empowerment are two mantras of national political leaders in Bangladesh, as in many other countries. In this context, the vision of a Digital Bangladesh is crucially based on the creation of a circle of trust among the people involved, where it would be important to understand whether young women simply repeat these slogans or interpret and use them to their advantage.

How can we combine empowerment with respecting obligations in the local social system and avoiding disruption? PROTIC has sensitized us to the importance of the family, group and collective in Bangladeshi

society, as well as gendered roles, hierarchical rules and patronage systems. However, any project is a project of change and, in the name of respect for rules (social, cultural, religious, political), it could end up not being effective, or only having marginal effects. Of course, being able to call an ambulance or receive news and information on the harvest, together with other practical things, remain important necessities that have been met. It would certainly be interesting to see how requests related to more sensitive issues (e.g. an APP on women sexual health) can be supported without reproducing the power inequalities engendered by patriarchy, and other forms of discrimination (e.g. treating sexual health as functional only at procreation). This change in norms, to be effective, requires time and listening space and should involve not just the village, but in their own ways NGOs and government organisations we have worked with at a national and local level.

PROTIC has seeded to change both in the village and with its institutional partners. It has served as a catalyst to form a network for research and intervention. It blurred the boundaries between researchers and practitioners, enabling a mutual learning as regards intervention, data management, and project evaluation. This result was also made possible thanks to Sapienza funds for international cooperation: in 2018 more than 40 scholars from Europe, Australia, Asia, met in Rome for an intensive workshop entitled *Technology and Society: Diversity, Development and Community Change*.

The next challenges will be to identify ways to transform the specific case study into theoretical contributions to the developing of the CI and ICT4D field. This will only be possible if the insights offered by communication studies, psychology, anthropology, and social science will combine with the insights of field practice and ICT specialists to influence policy makers and stakeholders. In this sense PROTIC experience confirmed us that in a world increasingly characterised by the massive use of technologies for information and communication, only interdisciplinary perspectives – including continuing interaction between research and social action – can contribute to benefit from ICTs to address the major challenges that poverty, isolation, climate change, lack of access to information pose to the life of billions of people.

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