

Research into Use Programme

Capitalise on previous research investment made through RNRRS by getting into use the knowledge and technologies generated and the insights gained on scaling up processes

Maximise the poverty reducing impact of DFID research

The programme will target sectors where agricultural change can most effectively reduce poverty

Building on RNRRS legacy, poverty reduction focus, capacity building, impact assessment

EBRM Activities under FIU Funding

Output 1 : Improved institutional knowledge and capacity to deliver EBRM to rural farming community end users

Activities : Training materials developed and produced, Training course delivered to senior institutional staff, Training course delivered to implementing staff, M&E of training uptake.

Output 2 : Improved knowledge and capacity of end users to implement sustainable and cost-beneficial EBRM

Activities : Defining community cohesion level, Trainee selection, Delivery of Ecologically Based Rodent Management training to end users, Community-level knowledge dissemination, Environmental management demonstration, Community decision making and EBRM implementation, M&E of training uptake, M&E of EBRM implementation and impact

Output 3 : Improved availability of rodent management tools that are cost effective for rural farming communities.

Activities: Infrastructure investment, production design, materials sourcing, Staff recruitment, Market assessment, Distribution, Advertising, creating demand, Outcome M&E

Output 4 : Improved knowledge dissemination pathways for EBRM

Activities : Inter-national dissemination, National dissemination, Local dissemination, M&E of dissemination uptake,

Output 5 : Improved policies and recommendations on rodent pest management

Activities : Union/Upazila mobilization, National Regulatory Authorities, Department of Agriculture Extension, NGOs



এটিয় বাংলাদেশ ইঁদুর ব্যবস্থাপনা

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AID-COMILLA

Rat Management for Rural Communities

Department for International Development (DFID)

Research in to Use (FIU) Programme

Innovation Challenge Fund

Managed By: NRIinternational, UK

Lead Organization

AID-COMILLA

Coalition partners

Natural Resources Institute (NRI), University of Greenwich, UK, BARI, DAE, Prompi, MAWTS, SHUSHILON, Mukti Hari, LDRO, ARBAN, BRMA

Project Cost: £ 581,488.00

FIU Contribution : £ 385,339.00

Period: July 2008 to July 2011

Project Location: Comilla, Bogra, Kuslia, Netrokona, Khulna

Rats and mice have played a central role in human life for thousands of years and have adapted well to environments significantly altered by humans. Rodents have two major impacts on people's livelihoods. The first is the substantial pre- and post-harvest losses they cause to agriculture. The second is as carriers of debilitating diseases that can affect people and livestock. Despite the major economic impacts of rodents, they remain poorly managed in many situations through a failure to appreciate the range and scale of damage, to understand the population ecology of specific rodent species and appropriate management strategies, and ultimately to assess the costs and benefits of rodent pests and of their sustainable management.

RNRRS knowledge (R8424, R8184) was generated in Bangladesh to address the problems with pest rodents experienced by people living in rural agricultural communities. Previous research showed that 5-10% of stored grain was lost to rodents over each 3-month storage period (each household losing ~200kg/yr). Contamination with urine and faeces was also severe (200 > 1,500 droppings per kg). In common with most of Asia, Bangladesh farmers routinely plant 2 rows of rice for the rats for every 8 rows sown (pre-harvest losses ranging from 5-17%). Farmer damage assessments highlighted some of the more overlooked impacts of rodents, namely physical damage to houses, personal possessions, roads and fields. This damage requires extensive repair time to houses and fields, and significant financial expenditure when clothes, blankets, fishing nets, basins, utensils, etc. are damaged. EBRM strategies were shown to reduce the impact of rodents by 80-80% for different measurable indicators. This was established through comparing intervention villages with non-intervention villages. Similarly, farmer assessments showed EBRM strategies were roughly the same cost (financial and time) as former practice, but with a much higher benefit (rat population reduced by >75%). Furthermore, RNRRS actions trialled a training and dissemination system for delivering the knowledge required by rural communities to more effectively manage their rodent pest problems. Training materials in Bengali (video and manuals) were produced to assist knowledge extension.

Our initiative is to build on this RNRRS investment through a programme that links together a consortium of NGOs, commercial companies and the DAE to deliver training and demonstration to a large number of farmers based in the Southeast, Southwest and Northern regions of Bangladesh. This proposed new investment will particularly add value to the existing initiatives of the DAE to manage rodent pests and increase commercial involvement in the delivery of ecologically sustainable rodent management methods targeting agricultural communities. The DAE recognises that rodents are a serious constraint for all farmers and organises an annual national rodent campaign to do something about it. However, it is accepted that this existing initiative is an inadequate response to the rodent problem and that much more needs to be done. The technology of Ecologically-Based Rodent Management (EBRM) is knowledge intensive and requires a degree of community-coordinated action to be most cost-beneficial. It is widely considered that disseminating such knowledge is best achieved through a combination of hands-on training and demonstration with a mixture of "classroom" education and practical observation (as trialled in R8424, R8441, R8190 and R7372). This hands-on training is particularly important in the context of rodents where indigenous management strategies are usually ad-hoc, uncoordinated and often unsuccessful, which can lead to apathy and an inability to experience what life can be like in the absence of rodents. The evidence gathered through the RNRRS suggests that communities' attitudes can permanently change through the adoption and implementation of EBRM leading to many quantifiable improvements in people's livelihoods.

Our project starts out by increasing the capacity of institutions in Bangladesh to deliver EBRM knowledge to end users. These institutions go on to provide formal and hands-on training to communities through an iterative cycle of training, demonstration, feedback and lesson learning to empower communities in rodent management actions. Although 100% of community members will recognise rodents to be a major problem, few successfully engage with the problem through a lack of appropriate knowledge and tools. Encouraging organised action at the community level will be necessary for EBRM to work most effectively and, hence, the project will strengthen social cohesion, necessarily involving all social groups in its implementation with all social groups benefiting from fewer rodents pest impacts on their lives. In parallel, the project will produce a

new-design' rat trap that is more effective and durable than current available technology in Bangladesh. This new trap will be commercially distributed and marketed through existing marketing chains as well as through novel Public-Private partnership schemes whereby intensive trap use is encouraged at the community level as the primary means of rodent control (as opposed to the traditional use of acute poisons). We expect to increase demand for intensive trapping by demonstrating its efficacy to rural communities and, thus, promote community level buy-in through the purchase of traps by communities. Education and communication activities will aim to increase public and institutional awareness of the health problems caused by rats and how environmental management and hygiene measures can contribute to the overall objective of reducing the impact of rats on people's lives. Increased local awareness and demand will be channelled to encourage policy changes and funding priorities within local government (targeting political representatives at the Union and Upazilla level). We expect our proposed initiative can reach 20,000 farmers across 100 village communities to train them in EBRM, while at the same time strengthening the capacity of the consortium institutions to continue to deliver EBRM after the project completes.

The initiative is not commodity-specific as rodents will attack nearly all crops grown as well as causing significant damage to health (people and domestic animals) and infrastructure (buildings, farm fields, roads, personal possessions). Rodents can attack commodities along the value chain (pre-harvest, post-harvest, processing, marketing) so their holistic management can have positive effects across value chains. Rodent damage to vegetables can be particularly problematic by causing partial damage to maturing fruits that blightens or reduces shell life, leading to lower financial returns. Successful implementation of EBRM will certainly lead to increased yields of all staple crops and other crops grown, which should fuel diversification into more higher-value crops to supply an increasingly urbanised environment and more sophisticated markets. This means the proposed project has wide relevance to a number of FNRRS investments such as improving animal health and production (reduced leptospirosis and endoparasite loads), improved quality/sanitation of street foods (reduced faecal and urine contamination of stored food both before and after processing) and maternal/child health programmes. As EBRM is socially inclusive, working best when all social groups work together within a community, the initiative can help strengthen social cohesion and act as a springboard for other social issues. We expect people to benefit by the end of the project through improved yields as well as improved human health and increased human productivity (i.e. less debilitating disease, more and better food). We also expect these benefits will continue to accrue after the project has completed through policy changes (which lead to resource mobilisation), improved institutional capacity to deliver EBRM and the development of new delivery strategies (i.e. public-private partnerships) that can provide the knowledge and tools to communities through revamping fund and credit programmes operated by NGOs together with trap manufacturers/distributors.

