Rat catching in South Africa

RIU

Validated RNRRS Output.

Cheap, safe methods of controlling rats are now available to villagers in South Africa. New rat traps and an understanding of how and why rats should be controlled helps rural communities protect their stored grain and reduce risks to their health. Rats not only damage and destroy crops but also affect humans—they contaminate water and food with debilitating and even deadly diseases. Safe baits to control rats are ineffective. So, people resort to rat poisons that are very dangerous. Cases of accidental poisoning are common. Rural communities in the Limpopo and North Region of KwaZulu-Natal provinces in South Africa now use traps to control rats. The South African company that produces the traps—a low-cost, break-back design—already can't keep up with demand.

Project Ref: **CPP62:**
Topic: **5. Rural Development Boosters: Improved Marketing, Processing & Storage**
Lead Organisation: **Plant Protection Research Institute (PPRI), South Africa**
Source: **Crop Protection Programme**

Document Contents:

Description

CPP62

Research into Use
NR International
Park House
Bradbourne Lane
Aylesford
Kent
ME20 6SN
UK

Geographical regions included:

South Africa,

Target Audiences for this content:

Crop farmers,

A. Description of the research output(s)

1. Working title of output or cluster of outputs.
In addition, you are free to suggest a shorter more imaginative working title/acronym of 20 words or less.

Ecologically-based and sustainable rodent control strategies in South Africa

2. Name of relevant RNRRS Programme(s) commissioning supporting research and also indicate other funding sources, if applicable.

Crop Protection Programme
Crop Post-harvest Programme (prior needs assessment research)

3. Provide relevant R numbers (and/or programme development/dissemination reference numbers covering supporting research) along with the institutional partners (with individual contact persons (if appropriate)) involved in the project activities. As with the question above, this is primarily to allow for the legacy of the RNRRS to be acknowledged during the RIUP activities.

R8190, R8441

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4. Describe the RNRRS output or cluster of outputs being proposed and when was it produced? ***(max. 400 words)****. This requires a clear and concise description of the output(s) and the problem the output(s) aimed to address. Please incorporate and highlight (in bold) key words that would/could be*

used to select your output when held in a database.

The cluster of outputs on rodent control in South Africa was produced in 2005 and 2006. **Rodents impact** upon sustainable **livelihoods** in many ways. Not only can rodents attack a wide range of growing **crops** in the field, but they contribute to further **food losses** during **storage** as well as **contaminating** food and water supplies with a number of debilitating and/or deadly zoonotic **diseases**. Rodents, therefore, not only impact upon crop yield and quality, but have major effects upon **human health**, **nutrition** and productivity. The conventional management of rodents has focused on the use of rodenticides as a symptomatic treatment approach. These methods are supported by government, especially to contain outbreaks. However, conventional control methods have remained largely ineffective, forcing peri-urban and **rural communities** to resort to the illegal use of highly toxic pesticides (rodenticides with acute toxicity or other poisons which induce fast and painful death). The consequence of this is human poisoning and environmental contamination. Acute poisons are also relatively ineffective tools to reduce rodent populations, rarely reducing populations by more than 50%. Inherent rodent neophobia results in the uptake of sub-lethal doses, bait shyness and behavioural resistance when using acutes. The use of acute poisons is perpetuated through the perceived value of collecting dead rodent bodies (which does not occur when using the more effective anti-coagulant poisons). In southern Africa ecologically-based strategies for management of rodent populations are not well developed in peri-urban/rural areas, in post-harvest crop systems and in response to disease outbreaks.

This research project was based on developing sustainable strategies for **ecologically-based rodent management** in rural communities of South Africa. By working with target communities as well as the traditional rodent management service providers (Environmental Health Officers, Agricultural Extensionists, and the commercial pest control industry), the project developed novel methods and strategies that were researched and evaluated for their cost-benefits and ability to effectively deal with rodent pest problems as experienced by rural agricultural communities. New knowledge with regard to understanding the impact of rodents on rural agricultural communities was generated, and a local pest control company was motivated and encouraged to manufacture a modified version of the imported break back traps used effectively in the project trials. Availability of improved break back traps will ensure cost stability affected by changes in local monetary value. This will add to the sustainability of rodent management in African communities. The foundation of public-private partnership was developed to promote rodent management knowledge and tools.

5. What is the type of output(s) being described here?
Please tick one or more of the following options.

Product	***Technology***	***Service***	***Process or Methodology***	***Policy***	***Other Please specify***
	X		*X*	*X*	

6. What is the main commodity (ies) upon which the output(s) focussed? Could this output be applied to other commodities, if so, please comment

Subsistence farmers and rural communities that were involved in the project produce mainly maize, together with sorghum, millet and a variety of vegetable, tuberous and leguminous crops. All crop production was considered because rodents can attack nearly all crops grown, and ecologically-based rodent management strategies can easily be adapted to different crops grown at different scales, from subsistence to commercial levels. Rodents also impact on livestock production through contaminating animal feed/water and the direct/indirect vectoring of diseases that affect animal growth rates and survival.

7. What production system(s) does/could the output(s) focus upon?
Please tick one or more of the following options. Leave blank if not applicable

Semi-Arid	***High potential***	***Hillsides***	***Forest-Agriculture***	***Peri-urban***	***Land water***	***Tropical moist forest***	***Cross-cutting***
X	*X*	*X*	*X*	*X*	*X*	*X*	*X*

8. What farming system(s) does the output(s) focus upon?
Please tick one or more of the following options (see Annex B for definitions).
Leave blank if not applicable

Smallholder rainfed humid	***Irrigated***	***Wetland rice based***	***Smallholder rainfed highland***	***Smallholder rainfed dry/cold***	***Dualistic***	***Coastal artisanal fishing***
X				*X*	*X*	

*9. How could value be added to the output or additional constraints faced by poor people addressed by clustering this output with research outputs from other sources (RNRRS and non RNRRS)? (**max. 300 words**).*
Please specify what other outputs your output(s) could be clustered. At this point you should make reference to the circulated list of RNRRS outputs for which proformas are currently being prepared.

The theme of integrated pest management in crop production (including insects, weeds, diseases) would be a natural clustering for which the project research outputs could be integrated. It is expected that similar extension approaches for different pest problems for crops such as maize could be sustainably managed through a common platform. However, most other crop pests are not as mobile or polyphagous as rodents. Therefore, management strategies which narrowly focus on a single crop may fail to mitigate rodent population dynamics in the same way as other relatively geographically restricted pest problems. (e.g. R8220, 8406,8422, 8453,7566, 8219, 7405, 8445, 8030, 8452, 8409, 8233, 8412, 6519, 7778, 8447)

Outputs would also be relevant for clustering around post-harvest protection and marketing by reducing rodent access to stored food at household levels through preventing contamination and damage to stored grain and food produced for sale, including the sale of fruits and vegetables and post-harvest processing and handling where rodent contamination may enter small- and large-scale processing systems. (e.g. R8263, 7543, 6331, 6658, 6502, 6684, 8265, 7486, 6684, 7442, 8433, 8272, 7530,)

In relation to post-harvest issues, rodents are well-known reservoirs for many microbiological contaminants such as salmonella and can contaminate food and water sources used by people and animals as well as vectoring

zoonotic diseases that affect livestock production and human health. In this regard rodents could be clustered with platforms on 1) livestock health and production, 2) water utilisation/sanitation management, 3) or maternal and child health programmes. (e.g. R8306, 8495, 6608, 8151, 7596, 7597 8152, 7359)

Farmer training platforms focussed on subsistence level or food insecure small-holders can easily benefit from knowledge on how to manage rodent pests and making use of available technology. Generic issues on population dynamics, preventive management, damage thresholds and monitoring are applicable to the management of any crop pest. Platforms that target the service providers and policy makers that deliver knowledge to farmers at a community level (NGOs, national extension) would be highly appropriate. (e.g. R8299, 8219, 8296, 8041, 8219, 8417, 8341, 8429, 8447, 8438)

Validation

B. Validation of the research output(s)

*10**. How** were the output(s) validated and **who** validated them?*
*Please provide brief description of method(s) used and consider application, replication, adaptation and/or adoption in the context of any partner organisation and user groups involved. In addressing the "who" component detail which group(s) did the validation e.g. end users, intermediary organisation, government department, aid organisation, private company etc... This section should also be used to detail, if applicable, to which social group, gender, income category the validation was applied and any increases in productivity observed during validation **(max. 500 words)**.*

- *Rodent management at community level:*

In the final phase of the project, farmers' diaries and market surveys were used to validate the success of the project at the community level. However, feedback from a community meeting indicated that farmers doubted the significance for them of recording on paper if they do not do so for other more important activities such as the recording of crop yields and losses. Although many villagers have learned to write, few do so regularly. It was thus decided to employ the field staff to maintain diaries on behalf of households, recording the rodent management activities carried out by participating households. At the end of the formal trapping trials for the baseline data on impact of rodents on rural communities, each participating household was presented with five break back traps as a gift. The project field staff were asked to conduct monthly follow-up visits with these households and record their rodent control activities in a diary. A questionnaire format was provided which was adapted by the field staff depending on the reply and the period of survey. Field staff were to inquire what farmers were doing with the traps, their rodent management activities, successes as well as failures and also to probe villager's opinion as to the value of the traps in terms of ease of use and financial cost. The farmer diaries were a successful method for monitoring people's attitudes towards the use of trapping as a rodent management strategy, and confirmed the likelihood that trapping could be a sustainable and cost-effective method of control for rural households. The market surveys from small village outlets indicated an increase in the demand for kill traps since the introduction of the trapping trials. It was remarked that kill traps available locally were difficult to use and were "not strong". In the survey it was found that some retailers of traps were out of stock and could not get hold of traps fast enough. To ensure sustainability immediate action was taken by establishing links between local

rodent trap manufacturer, rural communities, agricultural extension and retail outlets.

- *Dissemination and public-private service partnership:*

The foundation of a public-private service partnership was developed to promote rodent management knowledge and tools. In this partnership a series of training workshops for service providers were held in urban and rural centres. The workshops were well attended, with numerous latecomers disappointed at missing the opportunity. Pest management service operators from at least five provinces representing private PCO companies, pesticide manufacturers, municipal health departments from four major cities, state hospitals, the milling industry, a University and the Pest Control Services Industry Board (PCSIB) attended the courses. The participation of the role players in the training has resulted in the amendment of the national pest control operator's registration act to include rodent management as a separate specialised subject. On the strength of the project's involvement in rodent control training, PCSIB invited the project to participate in setting unit standards for rodent control for approval by the South African Qualifications Authority (SAQA).

*11. **Where and when** have the output(s) been validated?*
*Please indicate the places(s) and country(ies), any particular social group targeted and also indicate in which production system and farming system, using the options provided in questions 7 and 8 respectively, above **(max 300 words)**.*

Rodent management strategies were tested and validated in four small-scale and resource poor farming communities in the Limpopo Province and two similar communities in the North Region of KwaZulu-Natal Province in South Africa. Although the projects were conducted in rain-fed dry/cold and humid farming systems and; semi-arid, high potential and peri-urban production systems it was not specifically targeted for those systems, but targeted at the community level for small-scale farmers, *per se*, independent of the farming or production system. Rodent management principals, once understood and correctly applied, only need small adjustments to accommodate different rodent species which might occur in the different farming and production systems and the types and severity of damage incurred. The outputs can, therefore, be used in most small-holder farming systems, the key often being that strategies must operate at the community level.

Current Situation

C. Current situation

*12. **How and by whom** are the outputs currently being used? Please give a brief description **(max. 250 words**).*

Capacity building within the participating Universities and Government and research institutions formed an important part of the project. This achieved an ongoing revision of the training course for pest control officers which strengthens the content of existing crop protection vertebrate pest management courses. Rodent control expertise was established within the Agricultural Research Council-PPRI (Lead Institute) and the newly gained knowledge is applied on a continuous basis and will be applied in all future scenarios not only in South Africa but also further a field in the SADC (e.g. ARC-PPRI has a key role in a new rodent research project funded by the

European Development Fund for the SADC Competitive Regional Agricultural Research Fund). The newly gained knowledge by extension officers, pest control operators, and health inspectors assists them in executing their daily tasks. Empowerment and management capacity of the households in participating communities was increased on how and why rodents should be controlled, giving them a general awareness of rodent damage and rodent-transmitted diseases.

*13. **Where** are the outputs currently being used? As with Question 11 please indicate place(s) and countries where the outputs are being used **(max. 250 words).***

The outputs pertaining to rural communities are used in the Limpopo and North Region of KwaZulu-Natal provinces in South Africa, whereas capacity building and training out puts are used in major centres across South Africa.

*14. What is the scale of current use? Indicating how quickly use was established and whether usage is still spreading **(max 250 words).***

During the past year the newly gained expertise of the Agricultural Research Council-PPRI was called upon to assist in an advisory capacity during major rodent pest outbreaks in metropolitan and peri-urban areas. In rural areas, the scale of use is likely to be largely restricted to the areas where the project action took place. There are no active programmes to monitor current use and spread of the project outputs. However, one can assume an increase in demand through the willingness of the local trap manufacturer to invest in continuously improving the trap design and appointing personnel specifically for servicing rural areas. Rodent pest problems are ubiquitous so it is relatively easy to encourage farmers to try new methods and tools, but uptake is dependent on farmers seeing real benefits from their actions, which can take time to be observed.

*15. In your experience what programmes, platforms, policy, institutional structures exist that have assisted with the promotion and/or adoption of the output(s) proposed here and in terms of capacity strengthening what do you see as the key facts of success? **(max 350 words).***

Ecologically-based rodent management is knowledge-intensive, and successful adoption requires farmer education about basic rodent biology and behaviour and the way management strategies work. So programmes such as IPM farmer groups, farmer field schools and extension staff training programmes operated by NGOs and government will all be effective in conveying appropriate rodent management knowledge. Existing structures found in government and non-government extension can be used to improve the uptake of ecologically-based rodent management. Training of trainers and improving the standard of rodent knowledge made available are very relevant to the existing structures found in South Africa. Training of trainer programmes are perhaps the best way to increase capacity, but these need to be effectively managed to ensure messages are not degraded. An important feature of ecological rodent management is that many actions are best performed at the community level. In this regard, a degree of organisation and trust are usually required which is often best served by extension staff who generally work with communities on a broad range of issues.

South Africa has a relatively well-developed rodent pest control industry, and the project has been very successful in encouraging commercial enterprise to engage with the rodent pest management needs found in rural communities. The development of public-private partnerships should be relatively easy to progress in future

actions whereby commercial enterprises can work alongside agricultural extension platforms that target rural agricultural communities.

Government has also been highly supportive of the project, most notably by enacting changes in official training requirements for 'stand alone' rodent biology and management modules delivered to pest management practitioners.

Strategies to educate farmers and raise awareness through mass media can encourage adoption, particularly through advertising simple messages to promote long-term community-wide intensive trapping programmes using effective traps and improving people's knowledge about the damage rodents cause to their livelihoods. As will be the case with all knowledge-intensive agricultural interventions, advertising can get basic messages across that are then backstopped by extension agency programmes.

Current Promotion

D. Current promotion/uptake pathways

*16. **Where** is promotion currently taking place? Please indicate for each country specified detail what promotion is taking place, by whom and indicate the scale of current promotion **(max 200 words).***

Popular articles in the mass media as well as continuing with capacity building (training) on request from the Department of Health.

*17. What are the current barriers preventing or slowing the adoption of the output(s)? Cover here institutional issues, those relating to policy, marketing, infrastructure, social exclusion etc. **(max 200 words)**.*

Institutional financial and expertise constraints coupled with a general lack of awareness about rodent damage, rodent management problems and solutions can affect institutional abilities to make informed decisions and prioritise their expenditure. Awareness for both end users and policy makers needs to be increased through the provision of better information on the impact which rodents have on people's livelihoods. This is relatively easy to do through advertising campaigns, but in many cases, our knowledge about the impacts of rodent damage is still limited. Our knowledge on the type, prevalence and impact of rodent diseases on human health is even more limited. In this context, the need for more studies and data on rodent damage is strongly justified.

Infrastructure in rural areas can be limited, particularly where the tribal system in rural communities slows the adoption of newly introduced methods. Community-based rodent management fails when existing tools are inappropriately applied, breeding apathy and acquiescence to pest problems. This requires a change in attitudes that can only be wrought from demonstration of effective rodent management. End users can use existing tools only when they have sufficient knowledge about rodent biology, management tools and the importance of working together. The capacity of extension, therefore, needs to be significantly strengthened to reach more farmers more quickly.

18. What changes are needed to remove/reduce these barriers to adoption? This section could be used to identify perceived capacity related issues ***(max 200 words).***

Financial investment in knowledge delivery systems that target end users in communities with rodent pest problems and the extension staff to manage a greater number of communities.

Financial investment in knowledge generation, particularly related to measuring the impact of rodents on people's livelihoods.

Financial investment in knowledge dissemination through mass media targeting rural communities, policy makers and the wider public on the multiple impacts of rodents, the problems with current rodent management (e.g. acute poisons), and the cost-beneficial and ecologically-based methods through which rodents can be successfully controlled.

19. What lessons have you learnt about the best ways to get the outputs used by the largest number of poor people? ***(max 300 words).***

Community participation and acceptance of project activities as well as endorsement by chieftains. Verbal communication over written communication. Working in cooperation with extension.

Impacts On Poverty

E. Impacts on poverty to date

20. Where have impact studies on poverty in relation to this output or cluster of outputs taken place? This should include any formal poverty impact studies (and it is appreciated that these will not be commonplace) and any less formal studies including any poverty mapping-type or monitoring work which allow for some analysis on impact on poverty to be made. Details of any cost-benefit analyses may also be detailed at this point. Please list studies here.

There have been no formal impact studies on poverty related to the project outputs. Bearing in mind the cross-sectoral, multiple impacts which rodents directly cause to people's livelihoods, any reduction in rodent pest populations will have significant impacts on poverty. Cost-benefit surveys and monitoring work (see answer to question 21) were carried out as part of the project activities. These comparative studies showed ecologically-based rodent management (EBRM) interventions were significantly cost-beneficial in comparison to what farmers would traditionally do to manage rodents using acute poisons. EBRM achieved a much greater impact on reducing rodent populations and damage than the traditional methods employed. The financial investment of EBRM (which is no more than what households normally spend on acute poisons) is, therefore, significantly offset by significant savings to crops, stored food and damage to personal possessions which is generated by significantly lower rodent populations. Our studies do indicate that communities, themselves, do recognise these benefits through first hand experience and change their long-term behaviour in response to the outputs.

21. Based on the evidence in the studies listed above, for each country detail how the poor have benefited from the application and/or adoption of the output(s) ***(max. 500 words):***

- *What positive impacts on livelihoods have been recorded and over what time period have these impacts been observed? These impacts should be recorded against the capital assets (human, social, natural, physical and, financial) of the livelihoods framework;*
- *For whom i.e. which type of person (gender, poverty group (see glossary for definitions) has there been a positive impact;*
- *Indicate the number of people who have realised a positive impact on their livelihood;*
- *Using whatever appropriate indicator was used detail what was the average percentage increase recorded*

The South African government has from 1995 identified 13 rural and 8 urban poverty nodes through its Integrated sustainable rural development programme. Research and development projects of the ARC-PPRI focus on these poverty nodes, particularly in rural areas. Prior to the rodent control projects, participatory rural appraisals (PRA) had been conducted by this Institute in some of these poverty nodes in Limpopo Province (2001) and in KwaZulu-Natal (2004). Based on the outcomes of these surveys, major crop post-harvest constraints were identified by the target communities, showing rodent damage to be one of the highest priority problems. The DfID research projects were initiated on sustainable rodent control strategies in these specific localities.

No formal impact studies on poverty in relation to these project outputs were done since completion of these projects in 2005 and 2006. Some project activities can be related as follows; however, no details regarding gender, number or percentages can be given:-

- A post-trapping trial survey conducted by project field staff in four different communities in Limpopo, which was included in the 2005 FTR, indicated a decline in rodent numbers since traps were being used, and an increased awareness regarding rodent control strategies and its positive impact on household livelihoods. Further, that neighbouring communities were interested to adopt the results from the projects.
- In a similar market survey on rodent control products available in the study areas, the demand for traps in rodent control strategies had increased compared to the sale of rodenticides.
- A socio-economic study on factors influencing the transmission of rodent-borne diseases in southern Africa as part of the INCO-DEV Ratzooman project (2006. www.nri.org/ratzooman) conducted in one of the project's communities after completion of the rodent control strategy project, reported on the "successes of a rodent-related project" had influenced responses in the assessment on the awareness of rodents and that there existed a positive relationship in responses from this community on the relationship between rodent problems and rodent borne diseases.

Environmental Impact

H. Environmental impact

24. What are the direct and indirect environmental benefits related to the output(s) and their outcome (s)? ***(max 300 words)***

This could include direct benefits from the application of the technology or policy action with local governments or multinational agencies to create environmentally sound policies or programmes. Any supporting and appropriate evidence can be provided in the form of an annex.

Current rodent control practices are often based on the use of rodenticides. In southern Africa unregistered compounds with acute vertebrate toxicity are commonly used to kill rodents. Cases of these poisons being used for killing game animals and domestic pets have recently increased pressure on pesticide companies to become more pro-active in delivering appropriately packaged and more effective rodenticides. However, acute poisons are often perceived to be more effective at killing rodents than chronic poisons, and changing these misinformed perceptions is one of the major challenges facing experts working to improve rodent management in regions where acute poisons are widely used. Promoting the use of traps as rodent control tools linked to the dissemination of information on rodent control strategies, would lead to a reduction in the use of and dependency on rodenticides, a decrease in the misuse as well as the illegal use of harmful chemicals to control rodents that have contaminated the environment. This in turn could stimulate the return of natural avian predators of rodents in rural areas. Promoting ecologically-based rodent management with trapping is not only better for the environment, but it is more likely to be sustainably managed by farmers and communities through its cost-benefits and improved livelihoods.

Attached as Annex D: web article “Rodent control goes Eco”.

25. Are there any adverse environmental impacts related to the output(s) and their outcome(s)? ***(max 100 words)***

No adverse environmental impacts are expected. The outputs all aim to increase the end users’ knowledge on rodent control strategies and the promotion of cost effective and environmentally benign rodent management. By far, the majority of rodent species which are pests are non-indigenous cosmopolitan commensal species. Indigenous rodent species normally are sylvatic and only targeted for control when their populations become high, and in the process, invade and threaten the areas of human habitation.

26. Do the outputs increase the capacity of poor people to cope with the effects of climate change, reduce the risks of natural disasters and increase their resilience? ***(max 200 words)***

Climate change, rural and urban expansion and the effect of natural disasters on sanitation could contribute to increased rodent numbers and disease problems particularly in less-developed countries where the human disease burden is high. Evidence of climate change in North America has been argued to have increased the geographic expansion and prevalence of Lyme disease in northern USA and southern Canada. However, this is an emerging research area and little is known about the potential impact of global climate change on rodent-disease-human interactions in developing countries. The project outputs developed strategies to improve the food security of resource-poor farmers and their communities by providing sustainable and environmentally benign management of rodent pests. These knowledge outputs, and their subsequent dissemination to resource-poor communities, can stimulate community awareness about rodents, rodent damage and rodent-borne-diseases and the strategies regarding rodent management. Health-awareness will improve by their advancement

and improvement of hygiene standards. Pest management knowledge and coping strategies will increase the resilience of poor communities that are potentially faced with climate change and natural disasters.

Annex

Annex C: Demands for rodent control
Newspaper clippings regarding rodent problems

http://www.sowetan.co.za/

Sowetan :: Baby bitten to death
BOLO ke BOLO
Click here to access the latest Sowetan soccer news, insight and features from around Mzansi and abroad!
Consumer Line Contact Thuli Zungu
Consumer Line, P.O.Box 6663
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or e-mail at zungut@sowetan.co.za

Baby bitten to death
Wednesday October 04, 2006 06:14 - (SA)
Pertunia Ratsatsi

Killer rodents mauled a 13-month-old baby to death while she slept with her mother in a shack at Madelakufa in Tembisa.
Baby Ulwethu's screams as chunks of flesh were being torn from her hands and face woke her mother, Nandipha Nobaza, 28, who was sleeping in the same room, at about 10pm on Sunday.
Nobaza was horrified to find her daughter covered in bites and lying in a pool of blood. She carried Ulwethu to her neighbours and asked them to call an ambulance.
"I was sleeping when I heard my baby screaming in agony.
"I found her covered in blood and saw blood-soaked rats running away.
"She was bitten on her hands and face, and was struggling to breath," Nobaza said.
"I was praying that Ulwethu would not stop breathing."
But when she saw the paramedics covering Ulwethu with blankets she realised that her baby daughter was dead and gave way to grief.
Nobaza said she had been forced to share the rat-infested two-roomed shack because she could not afford to pay rent.
"I had no alternative but to stay there, even though a few days ago, while I was feeding my baby, rats nearly bit her.
"When I failed to pay last month's rent my landlord threw my clothes into the street."
Noluthando Nolondolo, 27, the owner of the shack, told Sowetan: "I have been bitten several times by rats.
"They target my feet while I am sleeping. My sister was bitten some time ago.

“It really is difficult to sleep, but we cannot stay awake all night.
“The rats come from the dump sites that have mushroomed all over the shack town,” Nolondolo said.
When Sowetan visited Nobaza in Tembisa yesterday she was sitting with friends in a candle-lit room.
She is unemployed, has no parents and cannot afford to bury the child, whose body is at a government mortuary.
Her boyfriend is also unemployed.
A police spokesman, Inspector Manyaza Ralidzhivha, said: “We have opened an inquest docket and are waiting for the post-mortem results.

http://www.iol.co.za/

IOL: Oh Rats! Rodents leave East Rand ravaged
News
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Oh Rats! Rodents leave East Rand ravaged
October 05 2006 at 12:04PM

Between April 2004 and September 2005 more than 75 000 rats have been captured and killed in the Ekurhuleni area, said Environmental and Health officials on Thursday.
Director Jerry Chaka said this was part of their holistic approach in dealing with the escalating number of rats roaming the area.
On Wednesday, the Sowetan reported that a 13-month-old baby was bitten to death by rodents in a shack at Madelukufa in Tembisa.
The mother of the baby, Nandipha Nobaza, said she herself was once bitten “several times” by the rats.
Nobaza described the incident as horrific and said while sleeping on Sunday at 10pm, she heard her baby screaming.
She woke up and found her child lying in a pool of blood after being bitten by the rats. Chaka said they were not sure that the child’s death was caused by the rats.
“We are waiting for the post-mortem and further investigation to see if the death was caused by the rats,” said Chaka.
The municipality placed cages in people’s homes on a daily basis to catch the rodents.
“We have video records showcasing our volunteers capturing the rats.”
After being caught, the rodents were gassed and buried in a refuse dumping site.
The main causes of the infestation were overgrown grass in residential and public areas, illegal dumping, leftover food and open dustbins.

He emphasised that the community had a role to play in combating the plague by keeping the area clean.
The Ekurhuleni Metropolitan Municipality was established on December 5, 2000. It encompasses Alberton, Benoni, Boksburg, Kempton Park, Tembisa, Germiston, Springs, Nigel, Brakpan, Lethabong, Kyalami and the Eastern Gauteng Services Municipality. - Sapa

http://www.hsrc.ac.za/

HSRC Review. Volume 4, Number 2, June 2006.
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IN THIS ISSUE

Living with rats

An HSRC research team has been to Cato Manor to investigate residents' attitudes to living alongside rodents, with a view to improving living conditions there. David Hemson and Suzanne Leclerc-Madlala report.
FORCIBLY DISPLACED from Cato Manor in the early 1960s, Conrad Buthelezi has since returned and painstakingly constructed a single-roomed dwelling, brick by brick. Additional rooms, marked out on the ground, will have to wait until he scrapes together enough money from whatever temporary jobs come his way. Although happy to be back, he is nevertheless adamant that other fruits of freedom have yet to come to Cato Crest. the way he sees it, he and the other slum residents are last in line for the benefits of progress and development. As the leader of the local Communist Party, he canvassed for the new AnC councillor, Gloria Borman. together, Borman and the hSRC are exploring the possibilities of participatory implementation research, with the aim of meeting people's post-democracy expectations and generating immediate improvements in their lives. Some progress has been made: tarred roads and drains now separate the conclave of shacks. But of abiding concern are the health hazards caused by the absence of really effective sanitation. Animal-borne diseases are a particularly serious matter in dire need of investigation. health conditions in Cato Crest are, in the words of the councillor, 'horrendous'. A walk through the community confirms that toilets are non-existent, mountains of rubbish lie adjacent to water points, and children are playing near stinking pools of stagnant water. the filth is appalling and disease hangs in the air. Researchers visiting Cato Crest Primary School have been amazed by how well the school functions, despite class sizes of up to 57 and no playing fields. the school has support from various organisations, including the Salvation Army, who provide sandwiches twice a day. however, learners from Grade 1 to 7 lack sufficient textbooks. And, at an event organised by the HSRC during water week, the learners related their negative experiences around water provision and their health.
While they welcomed the improved water supply, learners complained about the total lack of toilets in their area. they told researchers that, as a toilet, they either use the bush or plastic bags, which they then dump by the road. when asked if they suffered from worm infections, more than 6% raised their hands. Only 20% of these learners

had sought help at the clinic.
Zoonotic diseases – diseases transmitted to humans via animals – are becoming a growing problem in Cato Crest, as in other slums around the world. A combination of increased exposure to the effects of globalisation, climate change, urbanisation and poor sanitation are fuelling the increase in rodent invasions. the real possibility of bubonic plague outbreaks are causing alarm everywhere. In 2004, a consortium of european and South African research institutions, including the hSRC, undertook a project to understand the risks that rodent-borne diseases pose to the residents of Cato Manor.
Focusing on Cato Crest as a particularly densely populated and degraded section of the settlement, the project, called Ratzooman, undertook a socioeconomic survey of households, more than 30% of which claimed a family member had been bitten by rats at some stage.

Getting people to see rats as dangerous disease conductors is extremely difficult when they are far more concerned about other diseases as well as other hazardous aspects of their environment, namely, high rates of violence, rape, child abuse and everyday crime. Research revealed that people tend to describe rats much in the same way they describe thieves: scoundrels, who break in at night or when they are not at home to eat and destroy their few possessions.

Interestingly, rat-management strategies appear to be gender-specific. Men reported either using traps or pouncing on the rats in the kitchen, frightening them off with bright torchlight and loud shouting. woman on the other hand prefer to sprinkle judicious amounts of rat poison in selected areas, hoping the unwanted vermin will creep off and die. Analysis of the data showed that although people tried their best to create oases of cleanliness and order in their shack homes, they nevertheless tended to adapt to the filth of their larger environment, resigned to the inevitability of rats in their midst.
As one senior citizen put it, ‘Rats need food too. they are trying everything to survive, just like us’. At the water week event, Conrad Buthelezi sang a song of old uMkhumbane (as Cato Manor is popularly known) about children in the 1950s longing for a swimming pool. The yearning for a swimming pool may remain, but far more important to the people, particularly the children, is the immediate instigation of urgent measures to deal with all the environmental causes of ill-health.
Rats included. we hope, with this investigation, to support the implementation of better conditions by working with Councillor Borman to identify problems and monitor improvements.
Dr David Hemson is a research director in the Urban, Rural and Economic Development research programme, and Dr Suzanne Leclerc- Madlala is Professor of Anthropology at the University of Kwazulu-Natal.

The project also undertook to capture and test local rats for diseases such as leptospirosis, toxoplasmosis and plague. Post-graduate student field workers from the Anthropology Department at the University of KwaZulu-natal (UKZn) adopted some innovative research methods to record the locals’ perceptions, beliefs and ways of dealing with the health threats that rats bring into their environment.
Since rats are especially active at night, daytime interviews were supplemented with night-watch activities, such as participant observation with strong torches around garbage heaps and litter-strewn pathways. From the anthropological study of current perceptions and practices of Cato Crest residents in relation to rodent pests (specifically to large norwegian brown rats), it was clearly evident that poor people had learned to live with their rats. While local clinic records reveal the high prevalence of a variety of illnesses that patients present with – including illnesses related to HIV/AIDS (55%), tuberculosis (30%), diarrhoea (15%), and an incalculable amount of skin sores, common colds, and influenza – it is only when the rats actually bite either them or their children at

night that they seek help from clinics.

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Rising rodent numbers pose serious disease threat: Mail & Guardian Online

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Rising rodent numbers pose serious disease threat
Malelane, South Africa

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Rising rodent numbers in Africa are raising the chance of an outbreak of diseases such bubonic plague, a conference in South Africa heard on Thursday.
The Rats and Human Health in Africa conference, attended by scientists and doctors from 20 countries, found rodent numbers in Africa are thriving as municipalities with growing populations struggle to manage sewage and refuse collection.
"[With] the increase in poverty and the rise in informal settlements the conditions are ideal for rodents to prosper and for the related diseases to flourish," Dr Lucille Blumberg, of the National Institute for Communicable Disease in Johannesburg, told the conference.
A document drafted by the conference organiser, the United Kingdom-based Rodent Zoonosia Management (RatZooMan) project, says rodent-pest populations are worsening in Africa.
"Urban and peri-urban rodent populations generally increase with worsening sanitation and urban slums, which are growing in and around many African cities," the document reads.
The RatZooMan project is funded by the European Commission and uses ecologists, epidemiologists, anthropologists and economists to monitor diseases in rats and humans.
Rodents are known to act as reservoirs for more than 60 different diseases, of which there are two categories. The first, which includes bubonic plague, are contagious and can be spread from human to human.
Bubonic plague is one of the most widespread of rodent diseases. It comes from the bite of a flea and causes the lymph glands to swell. Some 2 421 people died of plague each year between 1987 and 2003.
About 90% of all bubonic-plague cases occur in Southern Africa.
Another contagious rodent-borne disease is Lassa Fever, which is prevalent in West Africa. Symptoms include vomiting, joint pain and headaches.
The second group is generally not contagious and is spread through rodent urine or faeces. These diseases can break out on a large scale in communities using common water and food sources that have become contaminated.
Two common diseases in the second category are leptospirosis and taxoplasmosis. Leptospirosis penetrates the skin and mucous membranes and causes fever, diarrhoea and joint pain. Toxoplasmosis, also found in cats and birds, causes lesions and a build-up of fluid in the brain.
Research has found that toxoplasmosis cases are present in 25% of the world's population. The seriousness of the sickness depends on the immune system of the infected person.
Most rodent diseases are spread by direct contact and by droppings in food. Some spread the disease to another

host, such as a cat, which then passes it on to a human.
Dr Steven Belmain from the Natural Resources Institute in the United Kingdom says rodent-pest problems tend to be underestimated by the authorities, mainly because there is a lack of adequate information.
Many African countries, for example, have been reporting a growing proportion of cases of “fevers of unknown origin”.
“We simply don’t know enough about diseases such as leptospirosis, and it is quite likely that rodent diseases are misdiagnosed to be more common diseases such as malaria,” he says.
Belmain says scientists have found that deforestation and intensified agriculture are bringing people into contact with wild rodents, which carry different varieties of diseases. “What people are doing is fundamentally encouraging conditions for the spread of rodent-borne diseases,” Belmain says.
Research has found that changing weather patterns have attracted more rodents to areas with higher rainfall.
Professor Herwig Leirs of the University of Antwerp says rodent diseases are under-diagnosed and many go un-reported. This makes it difficult to know how prolific rodents diseases area. He says the world has not reached the point where it should panic about rodent diseases, but the risk of an outbreak is increasing all the time.
“Hygienic conditions are not what they should be, especially with the development of mega-cities,” he says.
“Humans are also entering new habitats, which can put them at risk of contracting diseases from wild rodents.
There has also been a development of resistance to treatments.
“Another important problem is that rodent diseases have more of an effect on people with immune problems, such as those with HIV.”
Scientists and doctors at the conference have found poor awareness among the general public and many health-care staff.
Awareness is complicated by the fact that some rodent diseases are similar to better-known diseases and by the difficulty in diagnosing the disease-causing agents such as bacteria, viruses and protozoa.
The HIV/Aids pandemic has intensified the problem of rodent diseases. People infected with HIV have weaker immune systems and are more susceptible to rodent diseases.
What can be done to solve the problem?
Leirs says when there are fewer rodents, fewer people will be infected with diseases.
“We need to do more to control the numbers of rodents.
“They breed very quickly. You will often find cases with the great-great-grandmother living with its great-great-grandchildren.”—Sapa

Annex D: Environmental benefits

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Rodent Control goes ‘Eco’

Small-scale farmers acknowledge that rodent pests cause serious pre- and post-harvest damage to their agricultural crops. However, as rodents are known carriers of many diseases, the lives of these farmers and their livestock are also at risk.

Current rodent control activities often focus on the use of poisons – a financial practice not sustainable in areas where the poorest of the poor live – where neither money nor appropriate technical knowledge are readily available.

The activities of the rodent control project therefore focused on training of extension and pest control staff that are responsible for rodent management activities, and integrating their knowledge and interaction to improve service delivery to rural farming communities.

One of the most important achievements of the project was the partnership formed between research (ARC and the Natural Resources Institute UK), manufacturers of rodent management tools and pest control industry, to present training to agricultural extension, environmental health officials, municipalities and pest control operators.

The practical system of training which was recommended to senior policy makers within the Departments of Health and Agricultural & Environmental Affairs and to the Pesticide Registrar (overseeing PCOs) to institutionalise mechanisms of ensuring appropriate training, was given to staff providing rodent management services. Officials from local government, Municipalities, and from various companies and services from the private sector, attended the training courses that were presented in the urban centres of Pretoria, Durban and Cape Town, and the rural centres of Thohoyandou and Vryheid.

From this partnership a rodent management tools manufacturer had modified and started to produce break-back traps locally which ensures sustainability and a pricing structure affordable to poor communities. The efficacy of these traps was successfully demonstrated by the project research staff in trapping trials conducted in rural communities.

“We are afraid of putting out this black poison (aldicarb) for rats because sometimes it kills dogs too. Thank you for bringing us traps and teaching us how to control the rats. With these new traps it will be easy to kill the rats.” *Comment from a Farmer*