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Analysis of the constraints faced by small-scale irrigation farmers

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The study analysed the impact of the constraints faced by small-scale irrigation farmers on household food security in drought prone agro-ecological region 5 of Gwanda district. A case study of two small-scale irrigation schemes in Zimbabwe was conducted. The study looked at the social-economic factors, production levels, role of supporting institutions and the constraints faced by farmers. Primary data was collected using interview questionnaires with open and closed ended questions. Gross margin, multiple linear and binary logistic regression models were used to analyse the data. The study established the dominance of women and the elderly and less educated farmers in the schemes. The study also revealed that farmers were not able to grow crops throughout the year and they obtained very small net farm incomes. The main supporting service that the farmers were getting was the assistance from the extension workers and their main constraints were high water costs, shortage of water lack of access to credit, lack of inputs and output markets, lack of relevant training and information and damage to irrigation infrastructure. Inferential statistical analyses detected a negative impact of household size, area cultivated, total yield, and quantity sold to household food security while total income, land tenure, access to credit and extension services had a positive impact. Amongst others the study recommended financial assistance to farmers in form of subsidies or donations, training and provision of more advanced methods of farming, planned credit strategies and more relaxed requirements for accessing loans for small-scale farmers.

Biography

Langelihle Ndlovu has completed her Bachelor of Agribusiness at the age of 24 years from the University of Venda and is currently pursuing her Master of Science degree in Agricultural Economics at the same university.

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Management of agricultural insect pests by mechanical methods

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echanical control means the reduction or suppression of pests by manual device. This is non-chemical direct measure by which the insect life stages are directly hit and interfered by mechanical devices of manual operations. Mechanical control is rapid and effective method and mostly suited for small acute pest problems. Mechanical control is done by two ways- mechanical destruction and mechanical exclusion. Mechanical destruction means removing and killing the pest by manual force or mechanical force. The manual force includes hand picking of insects and insect egg masses (Eg: hairy caterpillars, leaf rollers, cabbage butterfly, mustard sawfly and tomato hornworm) trapping, shaking (collection of Helicoverpa larvae from red gram plants by shaking), sieving (red flour beetle) and winnowing (rice weevil), hooking (iron hook is used against adult rhinoceros beetle), beating (swatting housefly and mosquito) crushing (bed bugs and lice), combing (delousing method for head louse), brushing (woolen fabrics for clothes moth, carper beetle), water pressure sprays (aphids and spider mites). Mechanical destruction by mechanical force includes using of entoletter (storage pests), hopper dozer (kills nymphs of locusts by hording into trenches and filled with soil), tillage implements (soil borne insects, red hairy caterpillar) and mechanical traps (rat traps). Mechanical exclusion means, creation of a barrier which prevents access of pests to hosts. All these methods are labor-intensive when done on large scale. Mechanical barriers includes wrapping the fruits (Covering with polythene bag against pomegranate fruit borer), banding (banding with grease or polythene sheets - mango mealy bug), netting (mosquitoes, vector control in green house), trenching (red hairy caterpillar), bird perches, sand barrier (protecting stored grains with a layer of sand on the top), water barrier (ant pans for ant control), tin barrier (coconut trees protected with tin band to prevent rat damage) and electric fencing (low voltage electric fences against rats) etc. Management of pests by mechanical measures is ecologically safe, relatively little impact on natural enemies and other non-target organisms, no problem of resistance, resurgence and residue and well suited for use with biological control in an IPM approach.

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