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REORIENTATION OF R
FARMERS: REQUIREME

Allan Low

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1. Introduction

The new agricultural policy is directed a
support for the neglected small scale farm
promoting household food security. Researc
sion will be reoriented to serve the 95% of f
are poor, black, mostly part time and often
ming small areas of land. To this end the
has said it intends to move away from the cu
nalistic technology transfer model to a m
patory model of technology generation and
tion. The new approach will require researc
mes to be set in consultation with farmers
research institutes as has been the case in the

The purpose of this paper is to contribute t
on how this change might best be effected a
cular to attempt to highlight some of the key
will need to be addressed if a sustainable a
reorientation of research and extension t
needs of small scale farmers is to take pla
Africa.

The first part of the paper discusses the n
changes that are required and brief
approaches that have been adopted elsewher
similar shift in research and extension orient

The next part of the paper examines the ex
research and extension systems in the regi
small farmer orientation has been intr
attempts to highlight the successes and pitfal
ced by neighbouring countries. The fi
attempts to identify some of the key issues t
ly to determine the success of the change
South Africa.

2. Approaches to Research and Ex Small Scale Farmers

Deficiencies in the reductionist "transfer of approach

Reductionist research, where discipline
based in specialist research institutes
specific aspects of crop or livestock proc
been the backbone of technological
agriculture and this will need to co
technological advances achieved through
research have not served the needs of sm
poor farmers well in South Africa or othe
countries.

For the modern large scale farm sector, t
transfer of information on farmer producti
to specialist researchers and of research
farmers has taken place directly or throug
staff and agricultural supply companies. T

(a) Training and Visit Extensio

The key aspects of the T&V system ar
of extension staff to deliver only tech
and advice (not inputs or credit); a c
responsibilities, notably between
specialists' (SMSs) responsible for
technical messages and 'village ex
(VEWs) responsible for communi
farmers; a strict fortnightly schedule
identified 'contact farmers' and mee
SMSs; a well defined link betwe
extension via the SMS (Benor & Baxte

(b) On-farm Client Oriented Res

The key aspects of OFCOR are:
homogenous target zones on the bas
impressions of the potential for impro
description and understanding of farm
in order to group farmers in
'recommendation domains', to unders
behind farmers' current practices and t
areas amenable to solution through t
identification of factors for experimen
of assessment of the causes of pro
conducting experiments on farmers
based on a whole farm perspective and
assessments of cooperating farmers.

Typically T&V replaced existing exte
the changes were introduced nati
provincial level. OFCOR was often i
the establishment of new 'adaptive res
farm research teams to complement
based disciplinary or commodity resea

3. Lessons from experiences

This section describes some of the
introducing T&V and OFCOR in othe
countries. The objective is to highl
practical difficulties involved w
theoretical T&V and OFCOR models
Hopefully this will contribute to a cle
of the complexity of the transformatio
some insights into what is involved
these approaches.

Organisation of research and extensio

The introduction of T&V and OF
Province, Zambia provides an idea of
these approaches changed the old me
and delivery process.

Before ARPT, the development
extension messages had followed ver
command, as indicated by the black
messages were developed by researc
and then sanctioned by research and
headquarters. Production guidelines
high yields were developed for sep
and packaged into recommenda
agroecological zones. Field staff were
level by subject matter specialists
service on an *ad hoc* basis, or at distr
policy directions, production drives
combatting pest outbreaks and oth
passed down from headquarters.

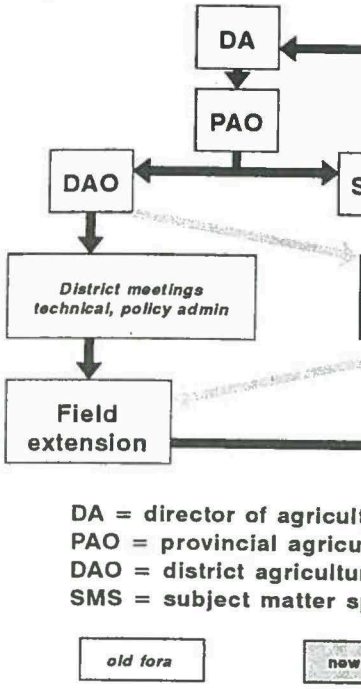

Figure 1: Zambia research and extension

Technology transfer

Moving from identified research topics to extension messages has also not been expected with OFCOR and T&V models i general analysis of the outcome of on-farm maize as well as cotton, sorghum, beans and in Swaziland, Zambia and Zimbabwe gave presented in Figure 2. This analysis shows third of the original research themes formu identified opportunities resulted in technol adopted. Most of these were adopted only pa limited number of farmers (less than 100 representing a proportion of the farmers coo the research).

In many cases losses before recommendat produced are due to poor planning and impl of OFCOR programmes. Deficiencies have i following:

- Superficial diagnosis of problems a Often this was based on a few days surveying in the field, resulting from urgency to get to the trial stage. This some inappropriate trials, such as stalk alleviate cobrot, which was not a problem in most years. Inadequate at been paid to agronomic aspects of di identifying which farmers have a give and to targeting of solutions.
- Poor implementation of trials. Man programmes suffer from inadequate a selection of farmers and field sites and field assistants, and lack of supe experiments. This has often been ca tendency to overextend the numbers

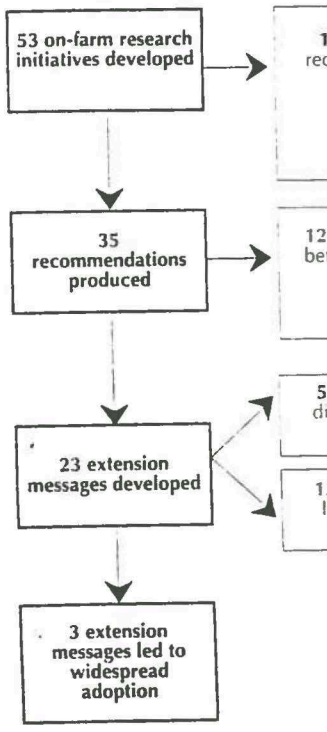

Figure 2: Analysis of the progression and Zimbabwe

However even where OFCOR ha implemented and research recomme resulted, translation of these recomm extension messages that are widely a been straightforward. Difficulties have a the type of recommendations coming type work, which differ from the husbandry" packages that extension wor with.

Some of the outputs generated by O better adapted varieties (shorter season planting) or recommendations adjust agro-ecological locations pose no real c traditional extension model.

But many of the outputs generated by recommendations that are either:

- sub-optimal, with input levels management less intensive than give good returns at high yield leve
- conditional on natural, econom circumstances

Sub-optimal recommendations take ac being unable to manage all factors optimum levels, because of resource priority conflicts. In these cases reco not concerned with "the best way" to with reducing management conflict management or resource use wi constraints. For example, recommendation involving delayed ap

whether fertilizer was applied or not. C
on-farm research results indicated the superior
open pollinated improved variety over hybrids
fertilizer was applied (Waterworth & Muwamb
However extension messages concerning maize
and fertilizer rates only related to hybr
recommended 60 Kg N ha^{-1}. The option of
fertilizer and non-hybrids was not included.

These examples illustrate the problem that e
staff had with handling management based
research findings that do not conform to
"technical" ideals. Acceptance of the u
sub-optimal and conditional recommendations
conflict with the technical training and i
experience of most extension and ag
development officers and requires new skills i
conditional judgements about what input l
management practices are appropriate fo
farmers.

This training element was missing in ma
programmes where the emphasis was
management process rather than message co
some instances the message delivery became o
For example in Swaziland standard messag
bundled up and delivered in an exact order an
regardless of modifications made by farmers t
for rainfall patterns or labour constraints
extension workers sometimes found themselv
farmers who had not yet planted that it was
topdress with nitrogen" (Low, Seubert & Wa
1991).

4. Making the change work: implementati

There are two distinct but related issues that n
successfully addressed if the concept of changi
'top down' to a 'bottom up' system of te
generation and dissemination is to be turned in
and produce effective results. The first issue
the practice of farmer oriented research and e
how to ensure that it is done well and effecti
second relates to linkages: many sets of actor
be involved and the flow of information betw
needs to be regular, relevant and understood.

The practice of farmer oriented research and e

The change from a technology based to a sma
based orientation involves a change in pe
outlook and attitude as well as the acquisitio
skills. As the experience has shown in neig
countries, these changes do not come about eas

The small farmer oriented approach in
fundamental change from the technically
research and extension philosophy. It is imp
realise that those who have been involved wi
successful (but limited) impact of the technol
approach will find it difficult to accep
reorientation is needed or will generate better
Malawi, for example, there was substanti
resistance from commodity research programm
development of adaptive research teams. The
adaptive teams had a role to play in setting
agenda for commodity teams was not easily
The commodity teams wanted adaptive tea
restricted to testing their station generated tec
on farmers fields in different agro-ecological c

including university departments and
supply companies.

Linkages and information flows

While the introduction of OFCOR and
have blurred the distinction betwe
extension, they have not obviated the
development of good information fl
technology generation and disseminati
Swaziland and Zambia miscommu
OFCOR and T&V teams led to the
mechanisms for improving informat
Seubert & Waterworth, 1991). In Zam
structures, information formats and
have been used to enhance
communication (Waterworth, 1990)
emphasis has been placed on pa
information in ways that are useful to
(Seubert, 1989).

In South Africa it will be necessary t
communication between such diverse
as research institutes, provincial gov
and extension organisations, N
departments and commercial input su
will be a formidable one and
underestimated as it has been by ea
T&V programmes, which assumed
approaches themselves would fa
extension-farmer links. Much can
neighbouring country experiences
communication problems. These in
develop joint research-extension
implementation of field work such
Committee for On-farm Research (C
Shumba, 1989), Lesotho's e
implementing a collaborative researc
programme (Low & Mokheseng, 198
use of farmer groups to bring resea
workers together (Norman et al, 1988)

5. Conclusion

Key lessons that emerge from th
neighbouring counties in implement
extension approaches aimed at meet
small scale farmers can be summar
words: commitment, competence, com

A genuine commitment to change fr
top down transfer of technology to
oriented approach to research and exte
all levels. This commitment needs
establishment of field OFCOR and
The change of perspective needs
supported by research and extension a

Such a change will inevitably take ti
in the meantime it is essential that the
in perspective is not weakened
implementation. Maximum use shou
community level experience of the N
Africa and a premium needs to be pl
level training by experienced practitio

Finally the technology generation
continuum needs to be well linke
particularly at the local level.

research and experiment station research
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