Extension service and training in South Africa

PRESENTATION BY:
Johan Malherbe
Gugu Zuma-Netshuiki
Obed Phalane

Agricultural Research Council - Institute for Soil, Climate and Water

Expert meeting on national early warning system for agricultural weather management
Extension Service

• Since 1800’s
• Focus on technology transfer
• Commercial/Subsistance
  • 3.2 million households – smallholding agriculture
• 1995 extension service review
  • Poor quality
    • Lack of formal training (8/10 not sufficiently qualified to act as agricultural advisors)
    • Lack of in-service training
    • No contact between research and extension service
    • Farmer training centres constructed – only 15-20% attendance
    • Lack of coordination between departments of Agriculture and agricultural corporations
Extension service

• 2005: 1(extension):878(farmers)
  • Geographic area covered per officer
  • Client literacy
  • Level of practical functioning of local farmer groups/associations
• Due to low student numbers, colleges of agriculture shifted attention from extension to farmer training
• A 2003 report found that a extensive support program is needed to enhance effectiveness of extension service (improve competence)
Extension service

- Extension recovery plan (2008 – 2011)
  - Ensuring visibility and accountability of extension
  - Promoting professionalism and improving the image of extension
  - Recruiting 1 000 personnel
  - Reskilling and reorientation of extension
  - Provision of ICT infrastructure and other resources

<table>
<thead>
<tr>
<th>Field of study</th>
<th>No. of personnel registered in 2010 /11 per province</th>
<th>Total per study field</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EC</td>
<td>FS</td>
</tr>
<tr>
<td>B.Admin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Agric</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>B.Sc. Agriculture</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>B.Sc. Agric Economics</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>B.Tech.</td>
<td>88</td>
<td>16</td>
</tr>
<tr>
<td>B.Phil.</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>Honours</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>M.Phil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.Sc.</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>M. Sustainable Dev.</td>
<td>34</td>
<td>4</td>
</tr>
<tr>
<td>M. Sustainable Agric.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.Tech.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced diploma</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>National diploma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postgraduate diploma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher certificate in Agric.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ph.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baccalaureus InstitutionisAgriaeHonores</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>134</td>
<td>26</td>
</tr>
</tbody>
</table>
Extension Service

• Norms and standards for agricultural extension services and advisories

• Advisory service:
  • Assumes actively problem-solving farmer
  • Seeks advice from outside
  • Extension officer only becomes involved on request

• Extension
  • Knowledge and information support
  • For people engaged in agriculture
  • Broader than just providing advisories
National Agrometeorological Committee

- Quarterly overview of current climatic and vegetation conditions
- Related advisory adapted for local dissemination
- Room for regional refinement

Late start/Drought: Grazing

- Do not overstock at any time
- Always eradicate invader plants
- Never exceed carrying capacity of plant associations and densities
- Provide lots of drinking points
- During drought, periodically reassess the grazing and feed available for the next few months, and start planning in advance
  - Provide phosphorus licks freely
  - If grazing is in danger, herd animals into pens where different animals can be segregated and fed separately
  - Postpone mating for the duration of droughts
  - Sell mature livestock as soon as they reach marketable condition

Mulching

- Organic, inorganic
  - Increase infiltration,
  - Reduce runoff, water erosion
  - Reduce wind erosion
  - Organic – fertilizer,
  - Reduce evapotranspiration
Agricultural training and information dissemination at the ARC
Information dissemination and capacity building program

• Goal

• To promote and educate agricultural community (Farmers/Decision makers)
  • Application of seasonal forecasts
  • aware of limitations
• To produce clear, concise, sector/region specific advisories based on seasonal forecast
• To have a working dissemination protocol
Information dissemination and capacity building program

- Dissemination/application of seasonal forecast
  - CEC
  - NAC
  - AMESD
  - Farming communities – training programs – action research
Dissemination of agrometeorological information to farming communities
Background

• Extreme meteorological events such as droughts and floods with their potential to increase agricultural production risk can cause significant economic losses.

• Small scale farmers are more vulnerable to extreme weather events

• Importance of accurate forecasts with timely availability of information and services could facilitate strategic and tactical decisions in increasing and sustainable agricultural production
Overview

• Farmers’ perceptions about weather/climate information & agricultural practices
• Understanding of the needs and the gaps within the farming system
• Develop tailor-made outlooks, advisories, bulletins
• Establish dissemination channels and suitable methods of dissemination
Access to farming community

• Approach Extension Officer/s responsible for the area
• Approval of tribal authority for certain areas
• Build rapport with leaders of the selected area
• Clarify the influence of weather/climate to agriculture
• Conduct needs analysis in terms of:
  – agrometeorological services,
  – methods of information dissemination
  – indigenous knowledge on rainfall forecasting.
Qualitative Research

• Adoption of participatory tools by scientists for example:
  – Workshops
  – Questionnaires
  – Focus group discussions
  – Key informants interviewed
  – Observations during on-farm visits
  – Farm managed projects
Seasonal forecast from different sources

Crop Models

Long-term climate data

INTERMEDIARIES: Reconcile and formulate advisories and bulletins

Dissemination: 1

Dissemination: 2

Dissemination: 3

Farmers

Other farmers
Linkages in information dissemination

- Seasonal forecast producers (SAWS)
- Weather/climate databank monitors (SAWS & ARC)
- Agrometeorological information producers (Universities, ARC, ARS & other organisations) (DAFF, ADRM, NAC)
- Disseminators and end-users (Provincial ADRM and Local Municipality)
- Disseminators and end-users (Extension directorate)
- Farmers and the community at large (Farmers and other end users)
Dissemination Methods

- Education
- Electronic
- Workshops
- Meetings
- On-farm visits
- Print media
Evaluation of Weather Forecast Information Dissemination at Three Selected Towns in Mpumalanga Province
Background

- Quarterly workshops were conducted in several farming communities
- The farmers were taught meteorological terms and phenomenon in their local language
- The Short, Medium and Long Range Forecast Were discussed during the workshops
Objectives of the Survey

• To evaluate the farmer’s understanding of the meteorological terms used during the workshops
• Asses the relevance and the applicability of the weather forecast to the farmers agricultural activities
Communities Selected

- Three towns were selected in the Olifants catchment in Mpumalanga Province
- Total of 48 farmers

<table>
<thead>
<tr>
<th>Location</th>
<th>No of Participants</th>
<th>Median Farm Size (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belfast</td>
<td>11</td>
<td>31</td>
</tr>
<tr>
<td>Middelburg</td>
<td>13</td>
<td>135</td>
</tr>
<tr>
<td>Witbank</td>
<td>14</td>
<td>128</td>
</tr>
</tbody>
</table>
Results

- more than (63%) 30 people out of 48 interviewed demonstrated a level of understanding of some of the weather forecasting terms used during the workshops.

![Bar chart showing number of responses for different rainfall categories.](chart)

- Number of responses
  - Normal Rainfall
  - Below Normal Rainfall
  - Above Normal Rainfall

- Questions
  - Probability of good rain
  - Average of rain over time
  - Probability of poor rain
Results

• More than 90% meteorological information was received through Community Workshops
• More than 80% and 20% received through TV and Radio respectively
• Less than 10% receive their information from newspapers and meteorological bulletins
Results

- 34 and 33 farmers believed the forecast and was well explained
- 27 farmers mentioned that the information from other source other than the community workshop was not necessary for farm decision making
Conclusion

• Continuous improvements of farmers understanding of the meteorological information is an important factor in farmers acceptability and adoption of the forecast

• The community workshops was one of the important sources weather forecast information to the selected farmers
Recommendations

• Agrometeorological information understanding and awareness of services should be improved to increase the value and importance of these services.

• The increased and continued improvements in agrometeorological information dissemination are necessary to make agrometeorological information more accessible and useful to the subsistence farmers.