

FAO LESOTHO

# PRE & POST TEACHERS TRAINING ASSESSMENT

2014

Conservation Agriculture and Armyworm Training for  
primary and secondary schools teachers in Lesotho



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## **ACRONYMS**

**CA** – Conservation Agriculture

**CSA** – Climate Smart Agriculture

**DAR** – Department of Agricultural Research

**DFID** – UK Department for International Development

**DOC** – Department of Crops

**ECHO** – European Commission Humanitarian Office

**FAO** – Food and Agriculture Organization of the United Nations

**Fig** – Figure

**HG** – Home Gardening

**HG&N** – Home Gardening and Nutrition

**MAFS** – Ministry of Agriculture and Food Security

**MET** – Ministry of Education and Training

**MFLR** – Ministry of Forestry and Land Reclamation

**NCATF** – National Conservation Agriculture Task Force

**NCDC** – National Curriculum Development Centre

**SPSS** – Statistical Package for Social Sciences

## EXECUTIVE SUMMARY

In response to the Food Security crisis declared in 2012 by the Government of Lesotho, FAO Lesotho designed the Emergency and Resilience Programme (ERP) in partnership with MAFS and MFLR. ERP promotes, over a cycle of three years, sustainable and integrated agriculture practices leading to increased resilience of rural communities. ERP is structured around three pillars of action: Sustainable production, Capacity development and Information and analysis.

Longer term impact in resilience building requires the progressive capacitation of education institutions to promote adaptation technologies. Since 2014, FAO has worked closely with Lesotho NCATF and NCDC in the design and implementation of capacity building activities targeting teachers and principals from primary and secondary schools. This collaboration aims at the progressive and effective introduction of nutrition sensitive climate smart agriculture in schools curriculum.

In April and May 2014, six rounds of trainings on Conservation Agriculture and Armyworm were implemented targeting approximately 259 teachers (65 from primary, 194 from secondary schools). Pre and post training questionnaires to assess impact of training among teachers were designed and distributed, complementing FAO Lesotho M&E system established in 2012.

This “Teachers pre & post training assessment” (2014) covers nearly all teachers having attended to the formal training sessions held during Q2 2014 in Leribe and Mohale’s Hoek training events. Participant teachers assisted from all districts of the country.

As illustrated in this report, the trainings were successful in improving self-assessed knowledge and capacity to train others among teachers in all covered topics. This is a crucial element for ERP given the cascade and spill over effect intended with this investment in teachers training.

Conservation Agriculture is now perceived positively among nearly all participants and up to 97,4% intend to talk about it in their respective classes.

This round of training, combined with the distribution of 120 CA training kits that followed the trainings, is expected to make CA knowledge more active in Lesotho schools. It is encouraging to see that 95,4% of teachers perceived the CA training materials as very useful.

Follow up will be required to assess any upcoming challenge faced by teachers. FAO, NCATF and NCDC will continue working closely together to effectively improved agriculture knowledge among Basotho teachers, students and communities.

FAO would like to thank very specially the excellent group of trainers that facilitated this round of trainers<sup>1</sup>. Without their enthusiasm and commitment, this task would have never been accomplished.

‘Moho, re ka hlola tlala!

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<sup>1</sup> The group of trainers was integrated by: Ramochaha Lethola – Seed Markets Projects; Selebaleng Mofolo DAR; Rethabile Nchee – DAR; Selebalo Ramakhanna – DAR; Motlatsi Molatela – DAR; Sekhonyana Mahase - DOC

## I. Background

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FAO Lesotho designed its Emergency and Resilience Programme (ERP) in partnership with the Ministry of Agriculture and Food Security (MAFS) and the Ministry of Forestry and Land Reclamation (MFLR) addressing the increasing food insecurity generated by Climate Change compounded by social and environmental factors. FAO Lesotho ERP promotes sustainable and integrated agriculture practices leading to increased resilience of rural communities.

The ERP is structured around **three pillars of action**:

- **Sustainable production:** with an integrated range of CSA practices such as CA, Home Gardening, Nutrition and Food Use, Agroforestry and Natural Resources management (Integration of Livestock and Agriculture, Water and Soil Conservation).
- **Capacity development:** promotion of CSA technologies among national, district and community stakeholders increasing know how and knowledge transfer capacities. Special emphasis is made on communication and visual training material development.
- **Information and analysis:** integrated analysis of food security challenges and vulnerabilities supporting more effective evidence-based decision-making by relevant stakeholders.

The promotion of adaptation technologies requires the development of capacities among those stakeholders involved in extension, but also education and land management law enforcement. ERP has put at the core of the programme its efforts to strengthen extension officers and practitioners' awareness on the areas covered by the programme and improves communities training effectiveness. Furthermore, ERP aims to expand the diversity of stakeholders trained, reaching teachers, principals and continue working with chiefs and local leaders.

FAO, MAFS and NCDC conducted in the second quarter of 2014 trainings for teachers from nearly all secondary schools having agricultural teachers among the staff (220) and 65 teachers from primary schools included in a pilot group where agriculture is being introduced in the curriculum. All districts were covered. The trainings were facilitated by the National Conservation Agriculture Task Force (NCATF), MAFS and NCDC officials and funded by ERP.

The purpose of the trainings was to provide awareness on Conservation Agriculture principles and Armyworm control and prevention. Participants were also made aware of the CA training materials developed by the NCATF. Following the trainings, a total of 120 training kits were donated to NCDC for further distribution among schools (85 in Sesotho and 35 in English).

ERP has received in 2012 and 2013 a total financial support of USD4.8m from ECHO, DFID, CERF and Belgium<sup>2</sup>. Additional USD1,5m has been provided by ECHO, SDC, OFDA and COMESA for the period 2014-2015<sup>3</sup>.

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<sup>2</sup> The project codes supporting ERP in 2012-2013 directly are: OSRO/LES/201/BEL (Belgium), OSRO/LES/202/EC (ECHO), OSRO/LES/203/CHA (CERF), OSRO/LES/301/EC (ECHO) and OSRO/LES/204/UK (DFID). Additional funding from USAID (OSRO/RAF/205/USA and OSRO/RAF/303/USA) and COMESA (OSRO/RAF/307/COM) has contributed to coordination and training on Conservation Agriculture in the same period.

<sup>3</sup> The projects supporting ERP in 2014-2015 are: OSRO/LES/401/EC (DIPECHO), OSRO/LES/401/SWI (Swiss Development Cooperation), OSRO/RAF/307/COM (COMESA) and OSRO/RAF/402/USA (USAID)

In addition to the ERP, FAO Lesotho received additional USD0,36m from ECHO to respond to the armyworm outbreak occurred in January/February 2013, the worst ever recorded in Lesotho, affecting 8 districts and over 30,000 Ha of cultivated land. This project contributed to co-fund the training of teachers since the awareness on armyworm among teachers and students was identified as a priority target in the final evaluation of the project undertaken in Jan/Feb 2014.

This training assessment analyzes the impact of the training sessions and collects perceptions of future training needs among teachers.

## II. Methodology

In all the training sessions held (6 in total), a structured questionnaire was filled by all participants before and after the training was conducted. The questionnaires were anonymous in order to allow as much freedom as possible when responding to the questions. The Pre and Post training questionnaires (see Annexes II & III) focused mainly on self-perceived knowledge and capacities among respondents. No knowledge tests were undertaken.

The data was collated and analysed by FAO M&E team using Statistical Package for Social Sciences (SPSS).

Out of the 259 participants in this round of trainings, Table 1 below reflects individual responses in pre and post training assessments of the trainings. The number of responses per district may differ between pre and post training assessments mainly as a result of late arrivals or early departures of teachers at or from the training venue or unfilled questionnaires. All responses were used in the report analysis.

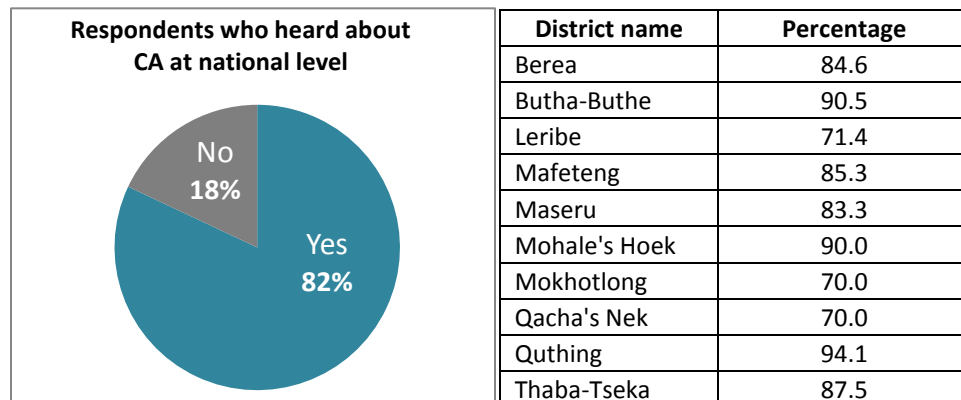
**Table 1 – Number of respondents for Pre and Post training assessment**

Names of the District	Pre-training		Post-training	
	Number of participants	Percentage	Number of participants	Percentage
<b>Berea</b>	26	10.2	25	10.3
<b>Butha-Buthe</b>	21	8.2	20	8.2
<b>Leribe</b>	49	19.2	42	17.3
<b>Mafeteng</b>	34	13.3	35	14.4
<b>Maseru</b>	42	16.5	42	17.3
<b>Mohale's Hoek</b>	20	7.8	19	7.8
<b>Mokhotlong</b>	10	3.9	8	3.3
<b>Qacha's Nek</b>	20	7.8	20	8.2
<b>Quthing</b>	17	6.7	17	7
<b>Thaba-Tseka</b>	16	6.3	15	6.2
<b>Total</b>	<b>255</b>	<b>100.0</b>	<b>243</b>	<b>100.0</b>

### III. Assessment Findings

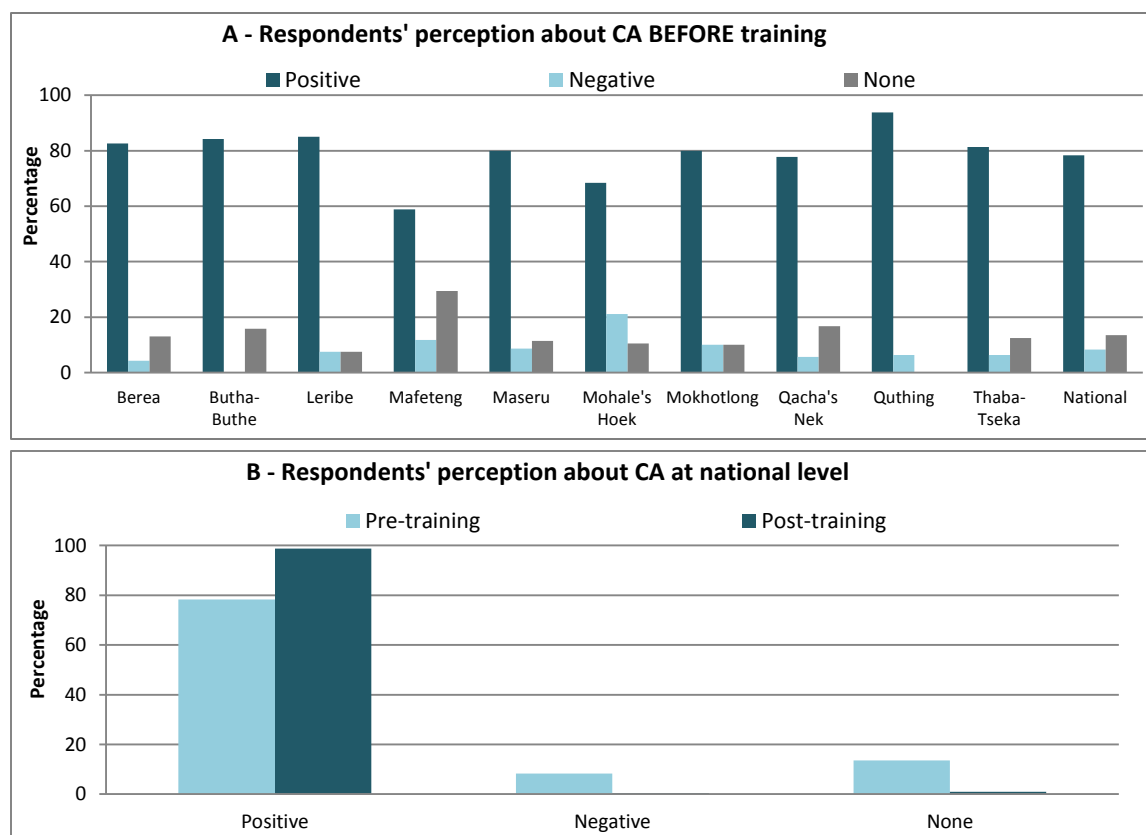
#### 1. Practice of Conservation Agriculture

Fig. 1 – Respondents who heard about CA BEFORE training



A majority of respondents had heard about CA before the training. This question does not assess knowledge. There is some significant disparity among districts being Mokhotlong and Qacha's Nek the less aware groups (70%) against Quthing, Mohale's Hoek or Butha-Buthe with more than 90%.

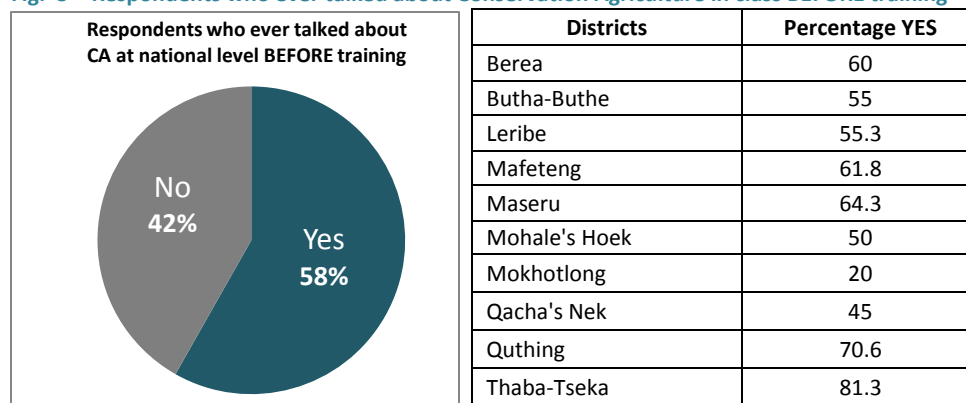
Fig. 2 (A & B) – Respondents' perception about CA



Respondents' perception about CA at national level was generally positive (78.3%) with a group of "no opinion" (13.5%) and very limited negative responses (8.3%). The training managed to inform and dispel the negative perceptions, reaching a 98.7% of positive perceptions after the training.

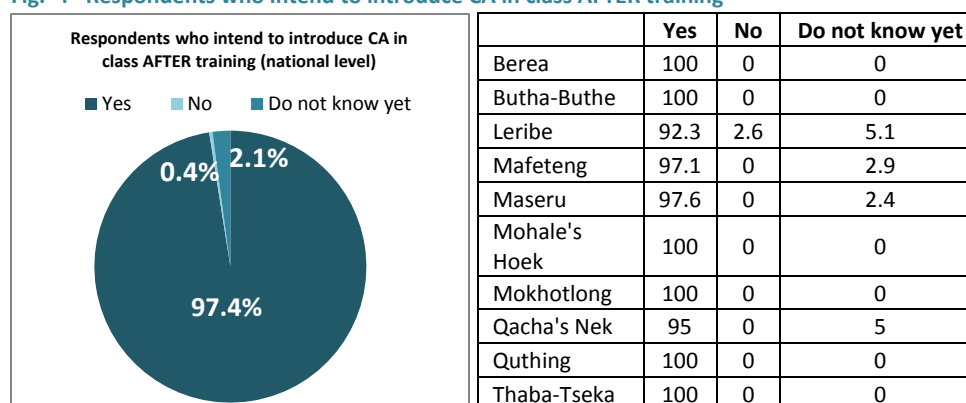


**Fig. 3 – Respondents who ever talked about Conservation Agriculture in class BEFORE training**



Although a large proportion of teachers (78.3%) had heard of CA before the training, only 58% reported having talked about it in class.

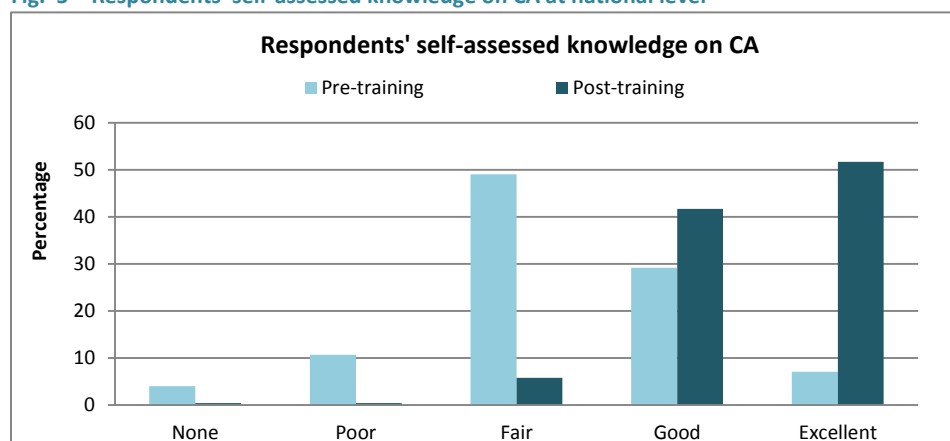
**Fig. 4 – Respondents who intend to introduce CA in class AFTER training**



The training seems to have contributed significantly to make CA knowledge a more active resource in the classrooms with 97.4% of teachers expressing intention of introducing CA in the classrooms. Follow-up would be needed to help teachers translate this willingness into action.

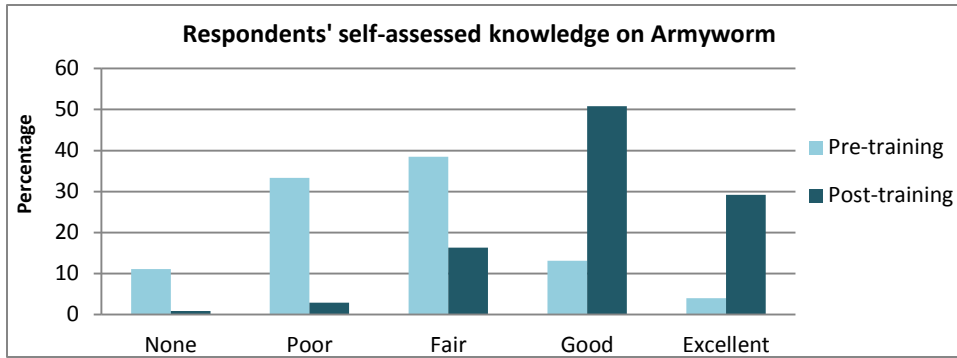
## 2. Respondents' self-assessed knowledge and self-assessed capacity to train others on Conservation Agriculture and Armyworm

**Fig. 5 – Respondents' self-assessed knowledge on CA at national level**



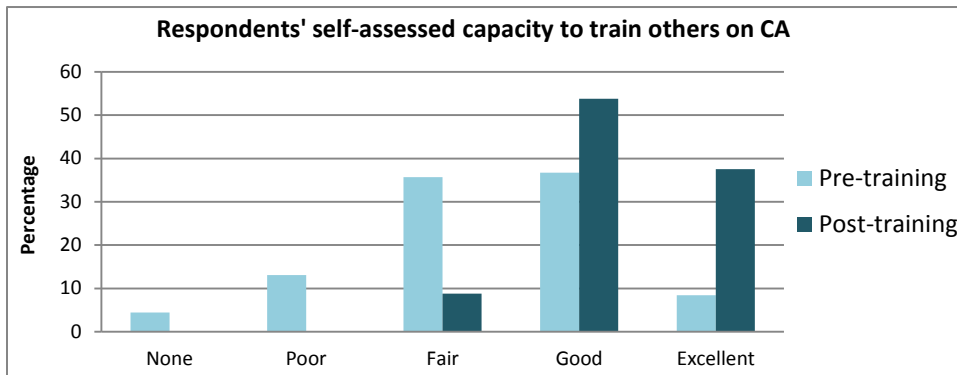
Self-assessed knowledge among respondents has improved significantly after the training where “Good” and “Excellent” predominate (cumulative of 93.4% after training against 36.3 before training).

**Fig. 6 – Respondents’ self-assessed knowledge on Armyworm at national level**



The training contributed to reverse the poor knowledge on armyworm with nearly 80% of respondents reporting “Good” or “Excellent” self-assessed knowledge after training while 83% had reported “None”, “Poor” or “Fair” before training.

**Fig. 7 – Respondents' self-assessed capacity to train others on CA at national level**



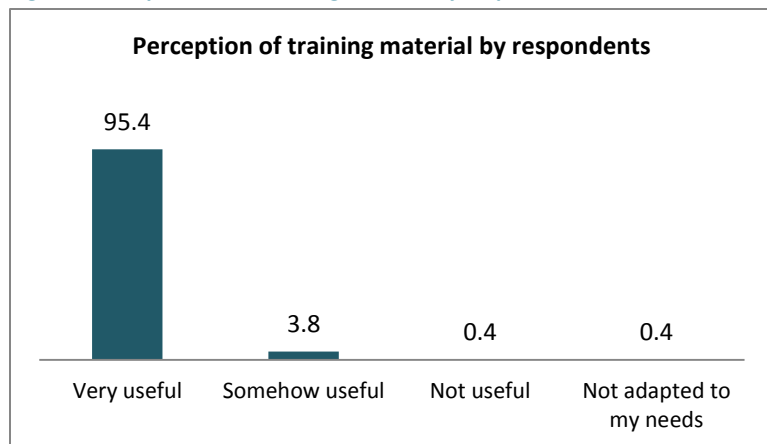
Respondents’ self-assessed capacity to train others on CA has significantly improved as a result of the training. From a cumulative 17.5% of “None” and “Poor” before training, it is brought to 0% after the training. The cumulative values for “Good” and “Excellent” evolved from 45% before the training to 91% after the training. It is thus expected that the level of knowledge transfer would increase in future interaction between teachers and students. Besides, this increased self-perceived capacity to train others may lead towards higher levels of motivation to promote CA among community members.

**Fig. 8 – Respondents' self-assessed capacity to train others on Armyworm at national level**



Training seems to have had a significant positive impact on self-assessed capacity to train others on armyworm. From a widely reported lack of capacity (nearly 41% among “None” and “Poor”) trainings reduced it to 2% in those categories. In categories “Good” and “Excellent”, it moved from 25% before the training to 77% after the training.

Fig. 9 – Perception of CA training material by respondents at national level AFTER training

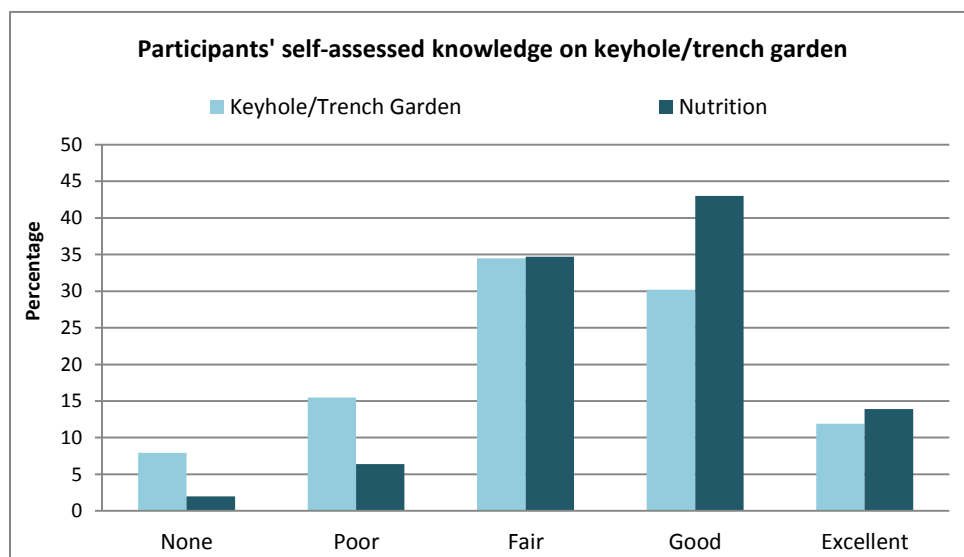


CA training material developed by the NCATF with editorial coordination of FAO, was explained to teachers and used during the training itself. 120 training kits have been made available to NCDC to distribute among schools. As reflected in the graph, these tools are perceived as very useful by the majority of teachers.

### 3. Participants self-assessed knowledge and self-capacity to train others on Keyhole & Trench gardening and Nutrition topics

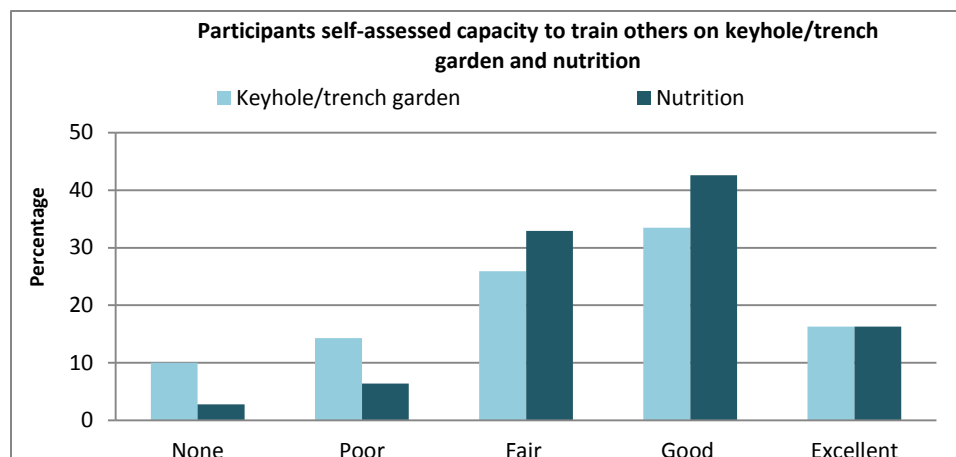
Since the training for teachers did not include Home gardening techniques (such as Keyhole or Trench gardening) or Nutrition related contents (it focused on CA and armyworm), AFTER training questions were not asked. This series of questions in section 3 are useful for programme planning, since FAO and NCDC intend to conduct Home Gardening and Nutrition (HG/N) trainings among teachers and principals in 2014-2015 with the occasion of production of visual training materials about HG/N.

Fig. 10 – Participants’ self-assessed knowledge on keyhole/trench garden at national level



Teachers’ knowledge on Keyhole & Trench gardening offers room for improvement, especially considering that Home Gardening is widely practiced in Lesotho rural areas and offers significant possibilities to contribute to food security and nutrition improvements as other ERP M&E reports show. Reported knowledge on Nutrition is higher than in these Home Gardening techniques but offers space to be improved and deserves it taking into account its importance in a country widely affected by stunting (40% U5 are stunted at national level).

**Fig. 11 – Participants' self-assessed capacity to train others on keyhole/trench garden and nutrition at national level**



It is interesting to note that teachers when answering “self-assessed capacity to train other on keyhole & trench garden and nutrition” seem not to only consider their knowledge about it. While 12% and 14% considered their knowledge excellent on those topics, 16% assessed as excellent their capacity to train others on those topics.

#### 4. Topics suggested for future training sessions

Teachers, when asked about areas that needed further knowledge improvements, reported that all three CA principles would need to be covered in future training. There was higher demand, however for minimum soil disturbance, followed by soil cover and third is Crop Rotation.

Armyworm biology and behaviour clearly outstands above the demands for further training followed by Early warning. Less interest or needs for training on use of pesticides was reported.

Trench garden is the topic with highest demand for further training followed by food preservation techniques. Keyhole is third and nutrition seems to be the area where teacher feel better trained about.

### IV. Conclusions and Recommendations

The results of the surveys indicate that the training conducted in 2014 among primary and secondary school teachers has been successful.

Conservation Agriculture is now perceived positively among nearly all participants and up to 97,4% intend to talk about it in their respective classes.

The training increased self-assessed knowledge in all topics covered. It also increased self-assessed capacity to train others in all areas. This is a critical element for ERP given the cascade and spill over effect intended with this collaboration with schools and teachers, in similar lines than the training among extension staff in 2013 and 2014.

This round of training, combined with the distribution of CA training materials is expected to make CA knowledge more actively shared in Lesotho schools. It is encouraging to see that 95,4% of teachers perceived the CA training materials as very useful.

FAO and NCDC plan to conduct refreshers and additional training on CA and Home Gardening / Nutrition in 2014 – 2015 targeting school principals and teachers.

Follow up will be required to assess any upcoming challenge faced by teachers. FAO, NCATF and NCDC will continue working closely together to effectively improved agriculture knowledge among Basotho teachers, students and communities.

## **ANNEXES**

**Annex I – Workshop Programme**

**Annex II – Pre-training assessment questionnaire**

**Annex III – Post-training assessment questionnaire**