



Conservation Farming Unit

2013 IMCS Broad Based Survey Highlights

Methodology revised to capture for 1st time, key adoption trends as a proportion of rural population rather than proportion of adopters among regular attendees of training

Methodology:

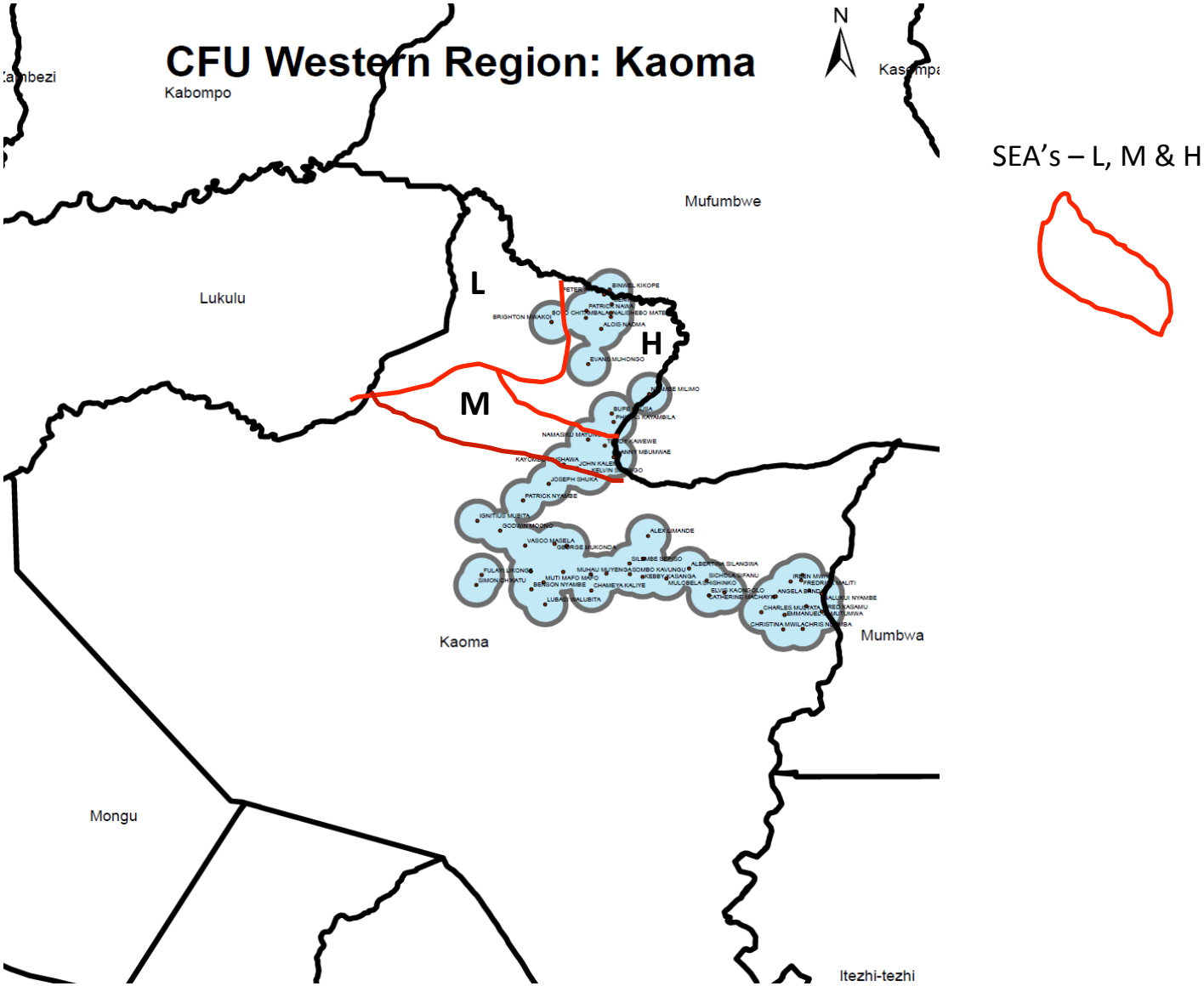
Spatial location of all **Lead Farmers** superimposed on CSO District maps using GPS

5 km radii 'i.e. **area of LF influence**' demarcated for each LF

Based on locations of LF's, area of influence categorized as **High, Medium** or **Low**

- **High:** **Optimal or excessive presence**
- **Medium:** **Partial presence**
- **Low:** **V low or zero presence**

Methodology continued: Example of Map



Methodology continued:

Target random survey Sample was **3,200** households i.e. 800 per CAP II Region

Total CAP II Districts covered was **16** out of **18**, Mkushi and Mongu excluded

Using CSO Standard Enumeration Areas (SEA) household population maps, SEA's categorized as having **high**, **medium** and **low** Lead Farmer influence levels

Table 1: Total Number of SEA's in Target Survey Regions

CAP REGION	NUMBER OF SEAs			
	HIGH	MEDIUM	LOW	TOTAL
Central	16 (0.7%)	278 (11.4%)	2,142 (87.9%)	2,436
Eastern	9 (0.3%)	428 (13.5%)	2,723 (86.2%)	3,160
Southern	23 (1.1%)	253 (12.2%)	1,791 (86.6%)	2,067
Western	32 (3.4%)	235 (24.8%)	681 (71.8%)	948
Total	80 (0.9%)	1,194 (13.9%)	7,337 (85.2%)	8,611

Data based on 2010 National Census of Population SEA Maps

Methodology continued:

The **8,611 SEA's** accounted for a total number of **738,508** households as at 2010 census records. Population figures derived by multiplying households by average household occupancy of 7. If derived figures adjusted by 2012 population growth rate, 2013 population is **5,473,000**

Table 2: Total Population of Target Sample Areas

CAP REGION	HIGH		MEDIUM		LOW		TOTAL	
	HHs	Pop	HHs	Pop	HHs	Pop	HHs	Pop
Central	1,594	11,158	22,353	15,6471	195,946	1,371,622	219,893	1,539,251
Eastern	1,013	7,091	34,645	24,2515	217,285	1,520,995	252,943	1,770,601
Southern	2,489	17,423	24,077	168,539	156,191	1,093,337	182,757	1,279,299
Western	3,359	23,513	20,147	141,029	29,409	205,863	82,915	580,405
Total	8,455	59,185	101,222	708,554	628,831	4,401,817	738,508	5,169,556

165 SEA's randomly selected for survey representing **36.6%** High Concentration; **4.6%** Medium Concentration and **1.1%** of SEA's in Low Concentration areas

For each SEA, **20 Households** randomly selected from total list of all households in sample SEA's

Of 3,200 sample target 3,164 covered by survey

Proportion of either MT/CT/CF Adopters Against the 2010 Census Population of Households

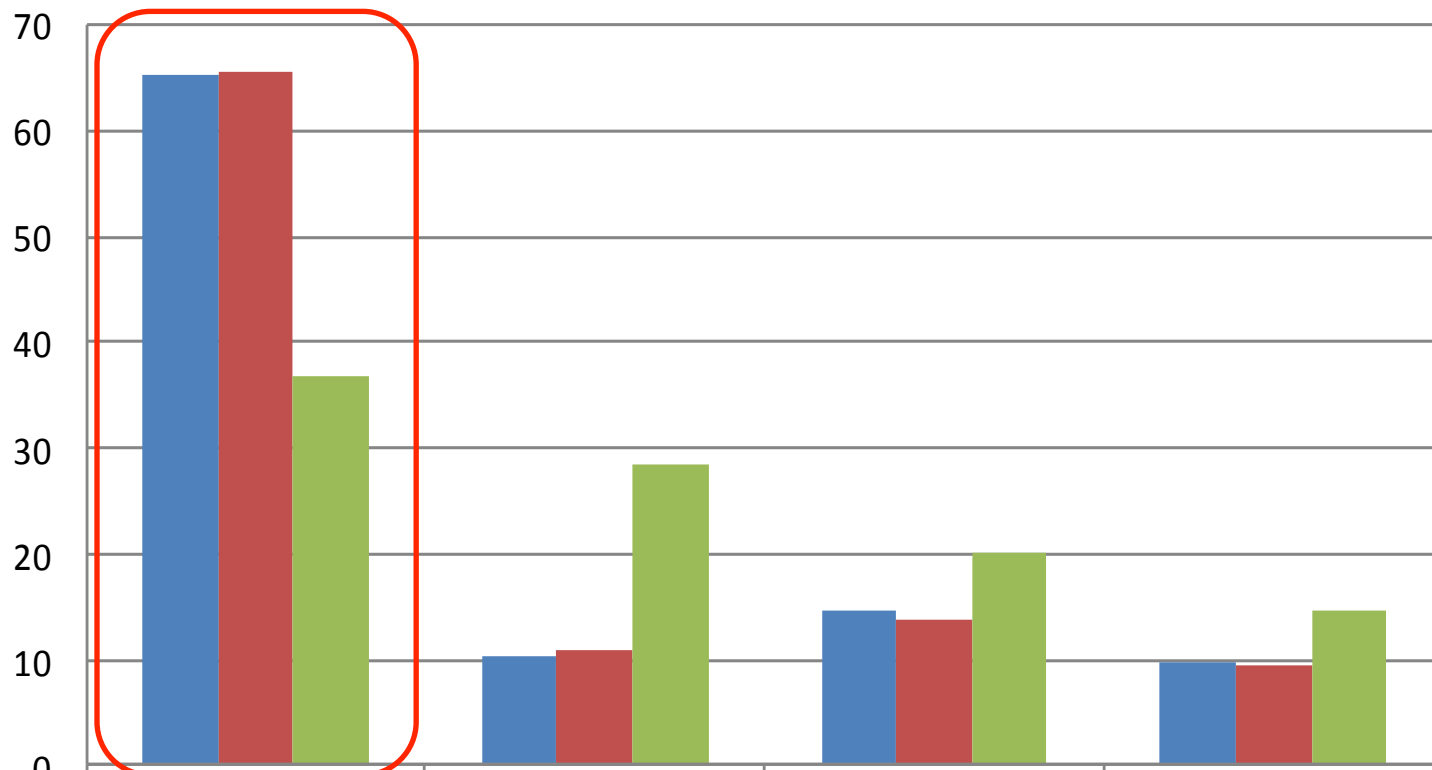
CAP REGION	HIGH		MEDIUM		LOW		TOTAL
	CF Adopters	HHs	CF Adopters	HHs	CF Adopters	HHs	CF Adopters (HHs)
Central	43.5%	693	29.8%	6,661	15.3%	29,980	37,334
Eastern	54.5%	551	26.0%	9,008	15.9%	34,548	44,107
Southern	37.4%	931	26.5%	6,380	10.8%	16,869	24,180
Western	33.1%	1,112	38.0%	7,656	23.1%	6,793	15,561
Total	40.8%	3,450	29.4%	29,759	16.1%	101,242	134,451

The above population figures of households are based on the 2010 Census data. Where the annual population growth rate of 2.89%, this would increase the total number of households indicated as adopters by at least 6% (e.g. giving a total of about **142,518 CF** adopters within the 16 CAP districts excluding Mkushi and Mongu)

Target December 2015 – 237,000 achievement to date is 60%

Main Provider of Training

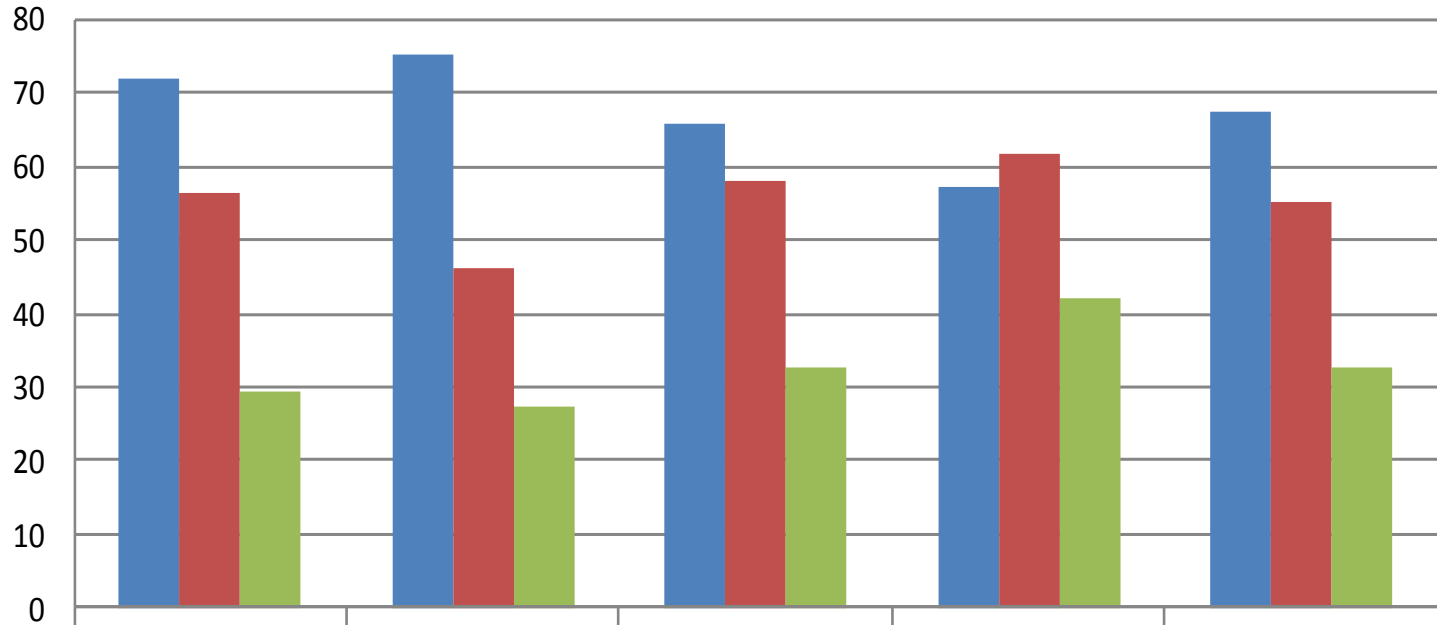
Chart 6: Main Provider of CF Training (%) - All CAP Regions



	CFU	MAL	NGO/ Private Sector	Other farmer
High	65.2	10.4	14.6	9.8
Medium	65.6	11	13.9	9.5
Low	36.9	28.4	20.1	14.6

Proportion attended Training – High, Medium & Low Presence

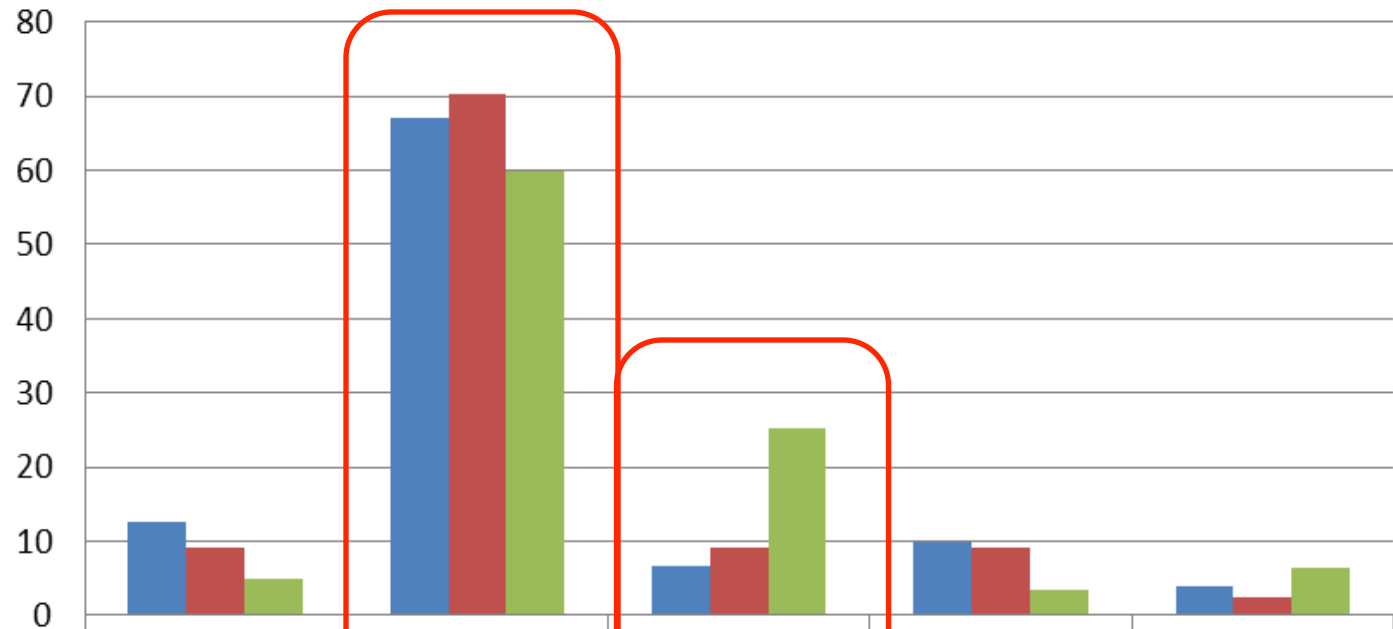
Chart 4: Proportion that attended CF Training (%)



	Central	Eastern	Southern	Western	Total
■ HIGH	71.9	75.3	65.8	57.1	67.4
■ MEDIUM	56.3	46.4	58.1	61.9	55.1
■ LOW	29.6	27.3	32.5	42.3	32.7

Reasons for not attending training

Chart 7: Main Reason for not attending Training (%) - All CAP Regions

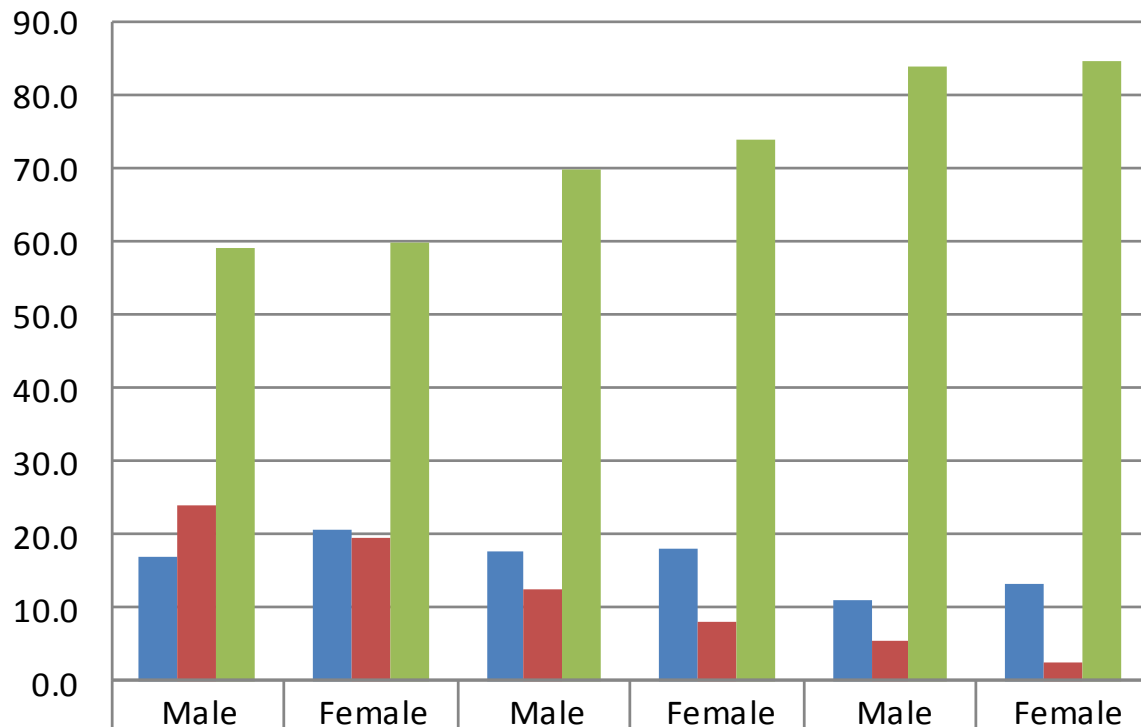


	Just not interested	Never been informed about such training taking place in the area	No one has ever hosted such training	Not convinced on the need to attend	Training sessions held too far away from location
■ High	12.5	67.1	6.6	9.9	3.9
■ Medium	9.1	70.2	9.1	9.1	2.5
■ Low	5	60	25.2	3.5	6.3

Land prep practices by CFU presence and gender

Chart 8: Land Preparation Practices by Area of Concentration and Gender (%) - All CAP Regions

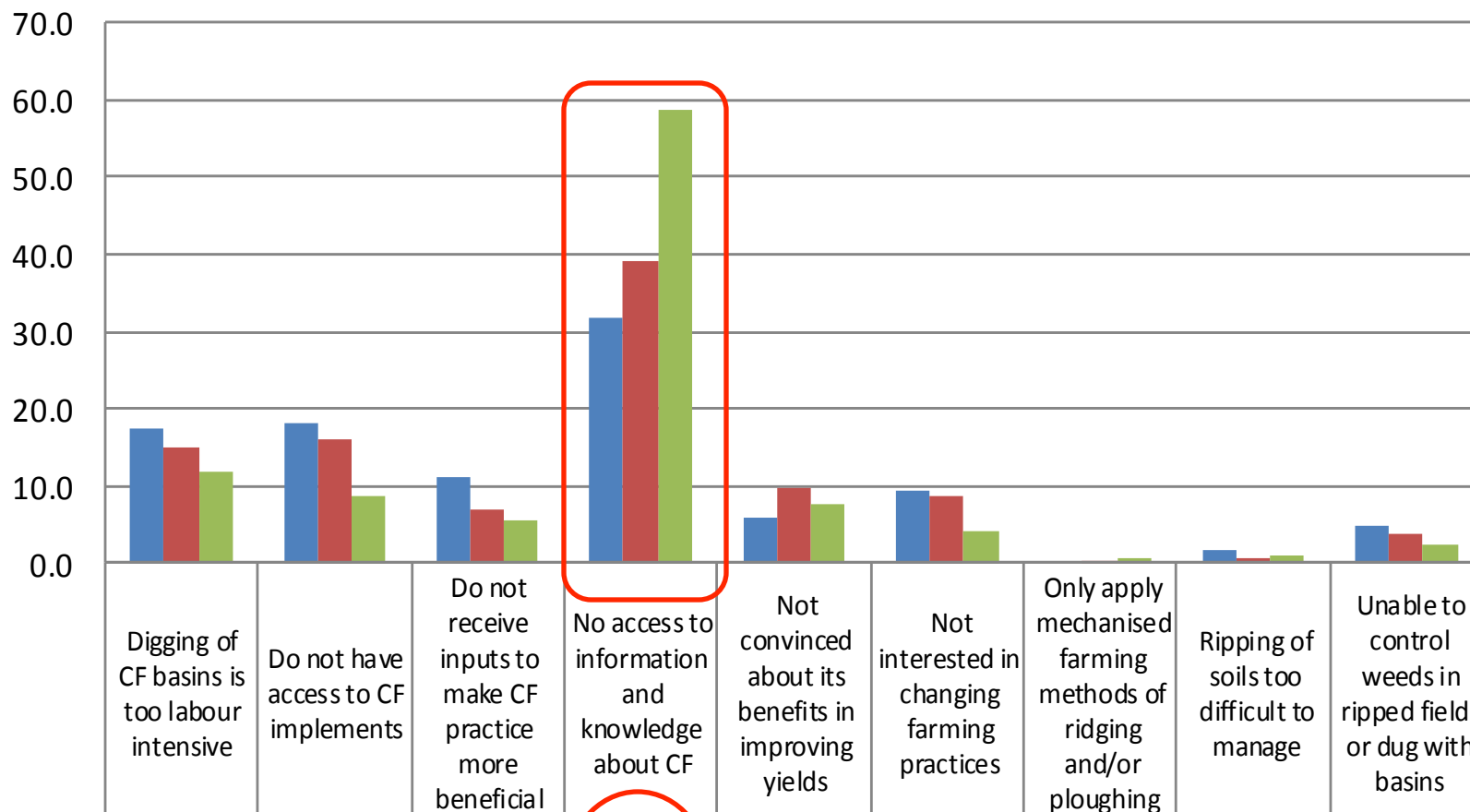
MT Adoption
 High: 41%
 Medium: 29%
 Low: 16%



	High		Medium		Low	
Digs Basins using the Chaka Hoe	17.0	20.8	17.8	18.0	10.9	13.1
Rips soils using the Magoye Ripper	24.0	19.5	12.4	8.2	5.3	2.4
Does not dig basins or rip soils, i.e. Non Adopter	59.0	59.7	69.8	73.8	83.8	84.5

Main reason for non adoption

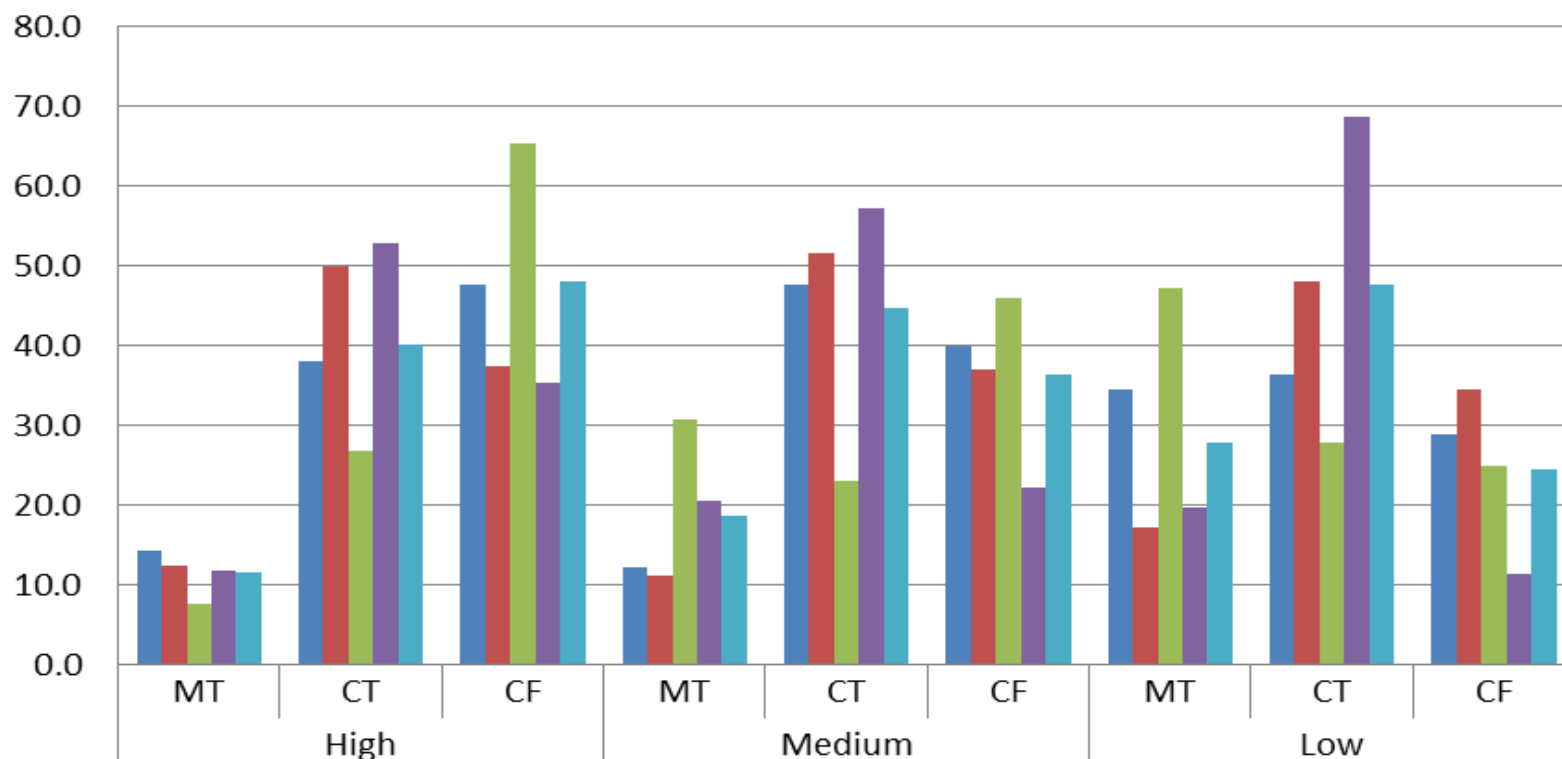
Chart 10: Main Reasons given for not Adopting CF (%)



■ HIGH	17.4	18.2	11.2	31.8	5.8	9.3	0.0	1.6	4.7
■ MEDIUM	15.1	16.0	6.9	39.1	9.6	8.7	0.2	0.7	3.6
■ LOW	11.7	8.7	5.3	58.9	7.4	4.2	0.5	0.9	2.4

Proportions of type of adoption in High, Medium and Low areas

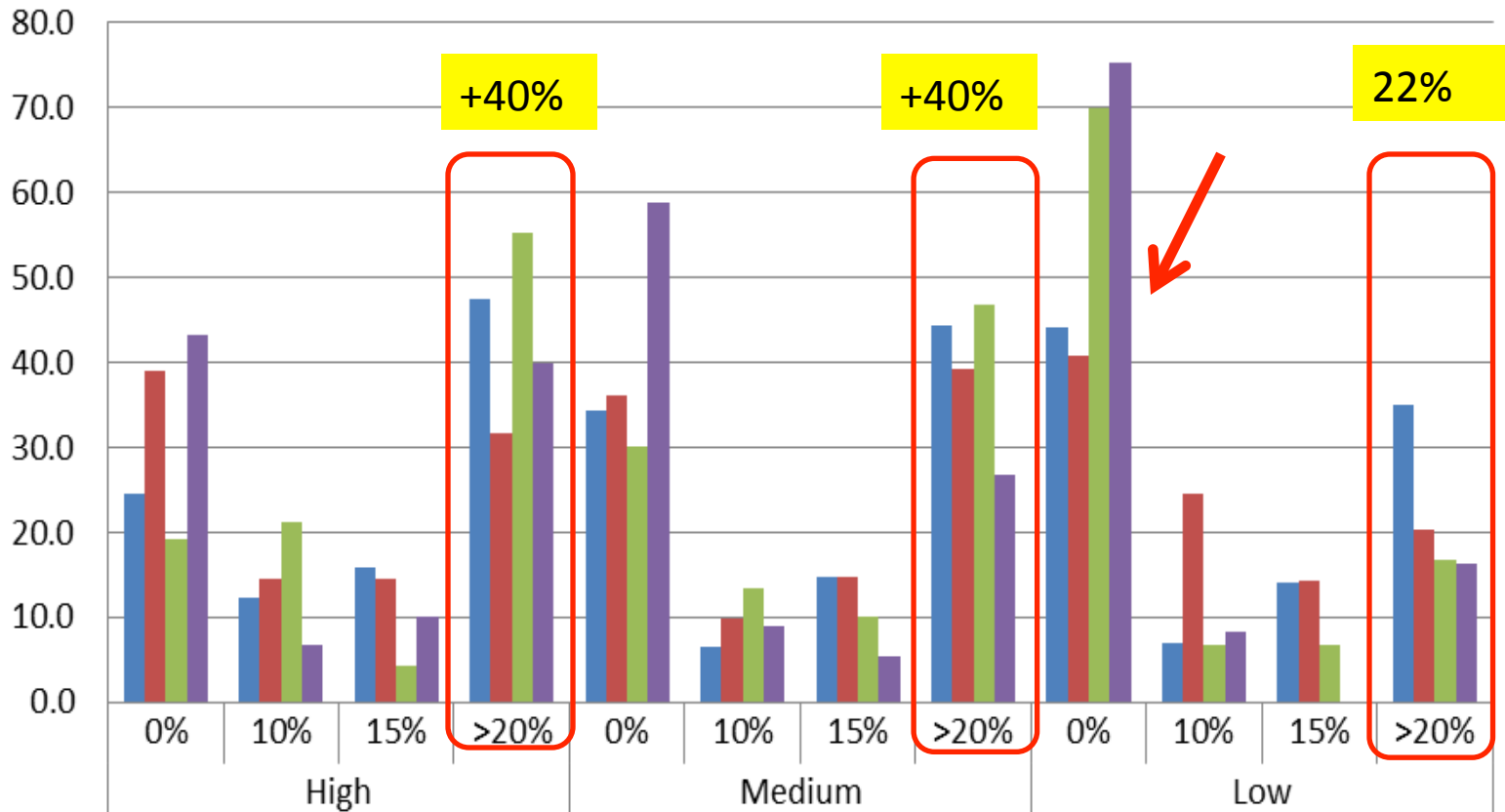
Chart 16: Categorisation of Farmers (% of CF Adopters)



■ Central	14.3	38.1	47.6	12.3	47.7	40.0	34.6	36.4	29.0
■ Eastern	12.5	50.0	37.5	11.3	51.6	37.1	17.3	48.1	34.6
■ Southern	7.7	26.9	65.4	30.8	23.1	46.1	47.2	27.8	25.0
■ Western	11.8	52.9	35.3	20.6	57.2	22.2	19.7	68.8	11.5
■ Total	11.6	40.2	48.1	18.8	44.7	36.5	27.9	47.6	24.5

Proportion of fields with Legumes High, Medium & Low

Chart 15: Proportion of Fields Under Legumes (% of Farmers)

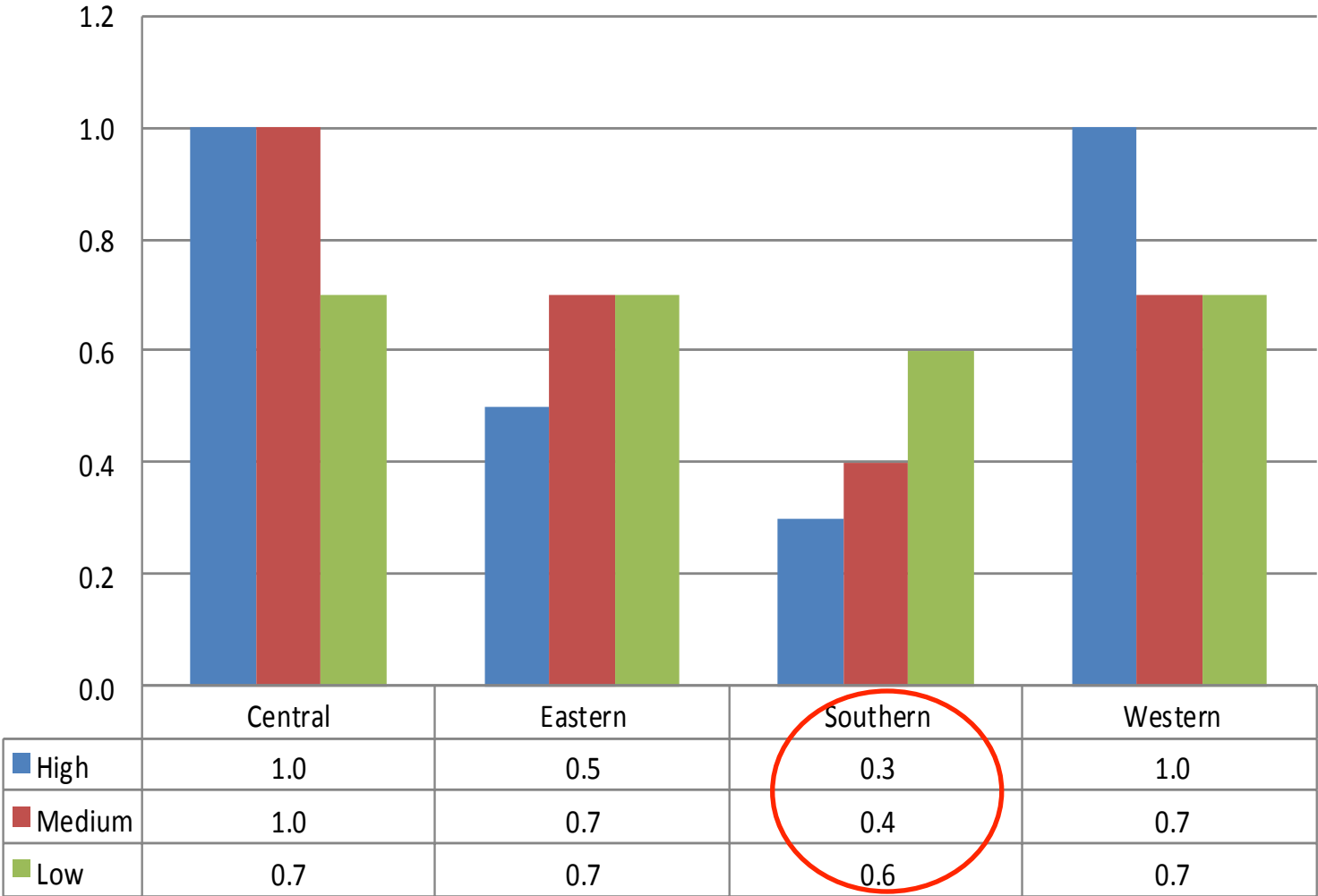


	High				Medium				Low			
	0%	10%	15%	>20%	0%	10%	15%	>20%	0%	10%	15%	>20%
Central	24.6	12.3	15.8	47.4	34.4	6.6	14.8	44.3	44.2	7.0	14.0	34.9
Eastern	39.0	14.6	14.6	31.7	36.1	9.8	14.8	39.3	40.8	24.5	14.3	20.4
Southern	19.1	21.3	4.3	55.3	30.0	13.3	10.0	46.7	70.0	6.7	6.7	16.7
Western	43.3	6.7	10.0	40.0	58.9	8.9	5.4	26.8	75.4	8.2	0.0	16.4

Average size of fields under Hoe MT

Average area under Basins **0.71 ha to 0.76 ha** except SR – 2015 Target **0.7ha**

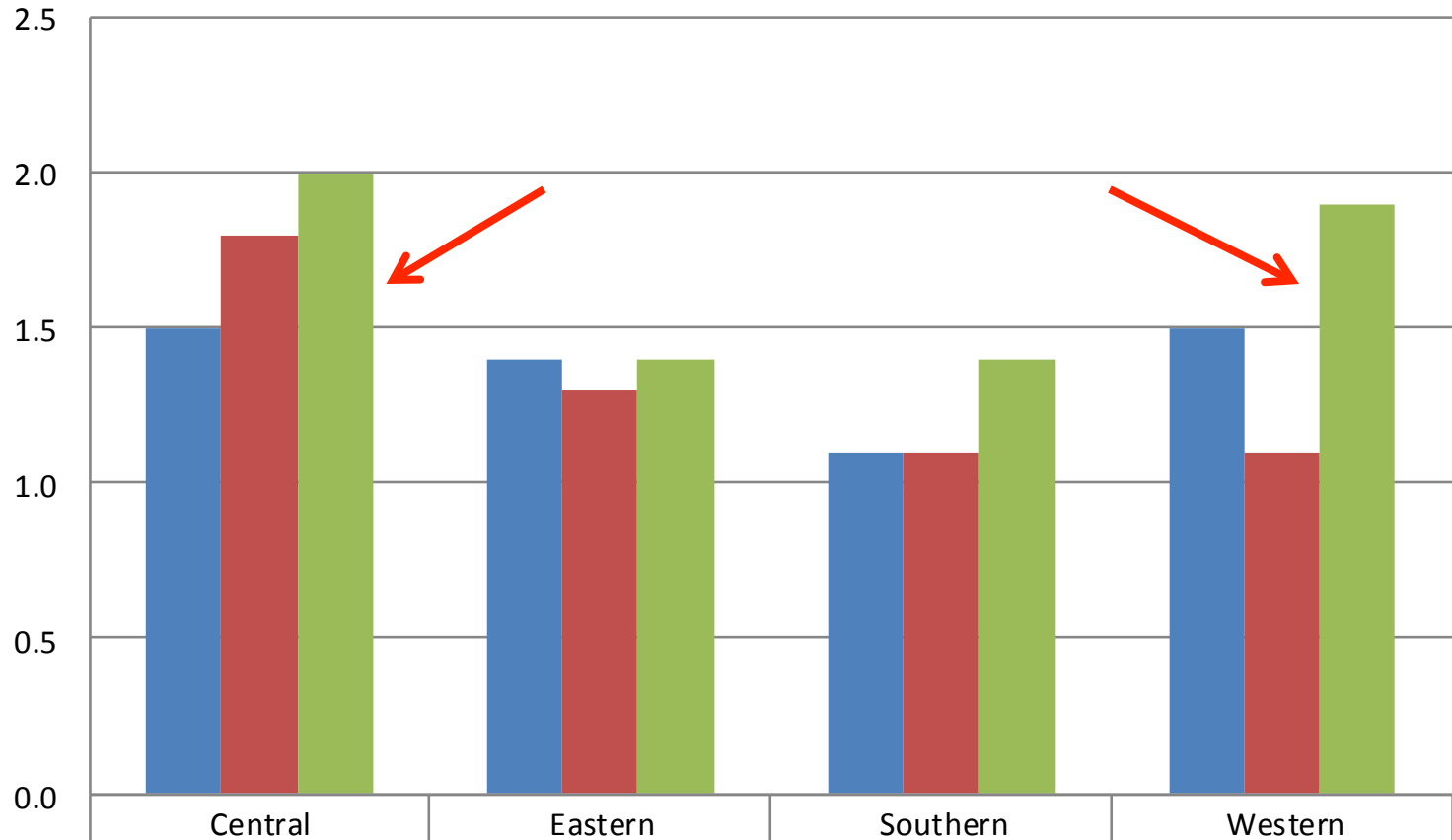
Chart 17: Average Size of Fields under Basins (Ha)



Average size of fields under ADP MT

Average area in High and Medium areas **1.3ha** and in Low areas **1.7ha** - 2015 target **2.5ha**

Chart 18: Average Size of Ripped Fields (ha)



■ High	1.5	1.4	1.1	1.5
■ Medium	1.8	1.3	1.1	1.1
■ Low	2.0	1.4	1.4	1.9

2013 progress against key 2015 LF targets

Total Numbers of Adopters – Minimum Tillage (MT)

MT Adoption	2015/16 Target	2012/13 Achieved	% Achieved
Hoe MT	157,000	94,215	60%
ADP MT	67,000	47,130	70%
Mechanized MT	13,000	*2,750	21%
Total	237,000	144,095	61%

*CFU Estimate

Area of Adoption - MT

MT Adoption	2015/16 Target Ha	2012/13 Achieved Ha	% Achieved
Hoe MT	110,000	66,000	60%
ADP MT	167,000	71,000	42%
Mechanized MT	10,000	2,750	28%
Total	287,000	139,750	49%

2013 progress against key 2012/3 2015/16 LF targets

Adoption by CFU Definitions Hoe and ADP Farmers Combined

Definition	2012/13 Target	2012/13 Achieved	% Achieved 2012/13 Target	% Achieved 2015/16 Target
Min Till only	60,338	27,955	46.3%	34.8%
Conservation Tillage	77,492	63,647	82.1%	61.6%
Conservation Farming*	39,920	52,405	131.3%	98.4%
Total	177,750	144,007	81.0%	60.8%

*Note: CFU's definition of CF is classified as CA by FAO and others and CFU's definition of CA in Zambia would be defined by FAO as CA + Agroforestry

2013 progress against key 2015 LF targets

Adoption of MT Disaggregated by Gender

MT Adoption	2012/13 Achieved Female Headed Households	Target 2015/16 Female Headed Households	2102/13 Achieved Male/Joint Headed Households	Target 2015/16 Male/Joint Headed Households	Combined Target 2015/6
Hoe MT	51,583	37,100	42,632	64,400	101,500
ADP MT	20,850	15,900	29,030	119,600	135,500
Total	72,433	53,000	71,662	184,000	237,000

Note CFU assumptions: Female 70% Hoe and 30% ADP; Male 35% Hoe and 65% ADP

Parallel Mini – Survey

Parallel mini survey being undertaken by CFU/IMCS is almost complete. Objective to confirm area of adoption by crop and comparative yields with non-adopters by physical measurement.

Area of adoption – 300 farmers

GPS walk of 300 farmers ,120 adopters and 120 conventional randomly selected, and 60 of best practice adopters

For adopters: Measure area under MT by ADP or Hoe or combined by crop

For non adopters: Measure non adopters area by crop

Yields from Sub-Plots – 300 farmers

Maize, Cotton and Legume yields for adopters and non adopters from 10m x 10m plots from best area of field in each case

Farmer physically demonstrates how fertilizer applied, extrapolated to per/ha basis

Nitrogen constant used to equate fertiliser rates and yield compensated cross plots

We know labour inputs so can do Gross Margin analysis and extrapolate by category

Conclusions

- **Current Adoption (direct or indirect) per Field Officer - 2,400**
- **Current Adoption (direct or indirect) per Lead Farmer - 80**
- **FO to LF ratio is 1/30**

- **Lead farmer approach effective but relative to farming population CAP II reach is very limited.**

- **Training is a process and not an event. To introduce range of technologies, train effectively and establish private sector input supply networks takes intensive effort over 5 seasons in any area.**

- **Impact of other promoters on training and knowledge transfer needs strengthening.**

- **Training provided by CFU, to other promoters and agencies needs to be reflected in adoption.**

- **In CAP II areas, 40% adoption of some form of CF is ceiling or approx. 300,000 households, beyond this incremental adoption too expensive.**

Conclusions

- **To achieve CAP II targets need to locate Lead Farmer extension services and agro-dealerships in 'Low' areas for last 2 seasons but also need to maintain some residual presence in current 'High' areas.**
- **Key challenge. How to achieve geographical spread while at same time providing quality training, supervision and support? Full engagement of effective MAL extension services essential.**
- **MFA/CFU have established an effective model to extend adoption of CF/CSA on national and regional basis but challenges demand much larger investments.**
- **Current approach by various collaborating partners piecemeal and uncoordinated with diggprojects stacked in CAP II Districts**