



The Drylands Development Programme (DryDev)



A Farmer-led Programme to Enhance Water Management, Food Security, and Rural Economic Development in the Drylands of Burkina Faso, Ethiopia, Kenya, Mali and Niger

2017 NARRATIVE REPORT

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1.0 INTRODUCTION AND BACKGROUND

The Drylands Development Programme (DryDev) is a six-year initiative (August 2013 to July 2019) funded by the Ministry of Foreign Affairs (MoFA) of the Netherlands, with a substantial contribution from World Vision Australia (WVA). The World Agroforestry Centre (ICRAF) is the overall implementing agency. DryDev is designed to provide relevant, contextually appropriate support to smallholder farmers in selected dryland areas of Burkina Faso, Mali, Niger, Ethiopia, and Kenya. It is seeking to meaningfully contribute to the realization of a **vision** where households residing in such areas have transitioned from subsistence farming and emergency aid to sustainable rural development. This is to be achieved by increasing food and water security, enhancing market access, and strengthening the local economy for different categories of farmers.

The DryDev programme aims to reach over 227,000 farmers across five countries in Eastern Africa (Ethiopia and Kenya) and the Sahel (Burkina Faso, Mali and Niger). The programme is implemented by a consortium of 21 organizations. Working with ICRAF to implement DryDev in its targeted countries are five National Lead Organizations (NLOs) and sixteen Implementation Partners (IPs), shown in Table 1.1.

Table 1.1: DryDev programme consortium members

Country	National Lead Organizations (NLOs)	Implementing Partners (IPs)
Burkina Faso	Réseau MARP / ICRAF	SNV; Tree Aid
Ethiopia	World Vision	EOC/DICAC; REST
Kenya	World Vision	SNV; CARITAS; ADRA
Mali	Sahel Eco	OXFAM; AMEDD; AMEPPE
Niger	Care International	World Vision; KARKARA; AREN; RAIL; CRESA

This report is a detailed account of the third year in the Implementation Phase of the programme, covering January to December of 2017. The report describes activities carried out and outputs and outcomes realized in each country with respect to DryDev's eight Work Packages (WP) presented in the [Consolidated Programme Implementation Plan \(PIP\)](#) and the [2017 Detailed Implementation Plan \(DIP\)](#). The report is presented in four sections:

1. Overview of progress in the five countries
2. Programme governance, coordination and technical support
3. Challenges, opportunities and lessons learned
4. Country-specific reports

2.0 OVERVIEW OF PROGRESS AND ACHIEVEMENTS

The year 2017 was the second year of full-scale implementation across all the five countries. By the end the year the programme had reached 147,527 farmers (66,126 of them women) in 110 sites across the five countries. Cumulatively, the programme has reached a total of 197,623 farmers (84,931 of them women) since the start of the implementation phase in 2015, which is 86% of the 227,000 targeted. However, most of the achievements were recorded in Work Packages (WPs) 1 to 5, whilst the last three appear to be lagging. This is to be expected as engagement and policy related activities build on the first WPs. The main results and sub-outcomes for 2017 include:

- 97,867 farmers (62,026 women) were engaged in sub-catchment level natural resources management interventions covering 51,842 ha of land.
- 51,499 farmers (17,923 women) participated in on-farm soil and water conservation initiatives; 70% of them had acquired knowledge and skills on various technologies, yet less than 12% are practicing those technologies.
- 64,498 farmers (22,783 women) participated in activities aimed at promoting climate smart agricultural production resulting in 27,214 ha being put under improved agricultural production and as many as 33,179 farmers applying these technologies.
- 26,446 farmers (15,988 women) participated in value chains with 20,222 of them linked to markets and 25,750 linked to market information sources.
- 31,431 people, including 29,909 women, participated in financial service related activities, and less than 25% have adopted savings and credit systems
- 6,395 people (2,540 women), farmer representatives, subnational level leaders and technical experts were trained in governance and technical issues to improve service delivery, but less than 45% of the farmers were satisfied with their service
- 5,383 people (1,957 women) participated in programme review and reflection activities whilst 5,058 farmers participated in action learning /planned comparison
- 13 legal instruments, plans and strategies were reviewed as part of improving policy implementation across the five countries and 13,009 people (4,074 women) participated in the policy and legislation awareness events

2.1 Work Package 1: Sub-catchment Level Natural Resource Management

The programme continued to engage and reach more farmers with various sub-catchment level natural resource management (NRM) interventions such as tree planting, rehabilitation of degraded lands, soil water conservation, farmer managed natural regeneration (FMNR), enrichment planting and forage rehabilitation and management. More than 97,000 farmers (62,000 women) participated in these activities and put 23,417 ha of land under various interventions. To coordinate and oversee these activities community-based institutions were established and / or strengthened. Through the development and / or review of bylaws and plans, as well as facilitation of linkages with appropriate government agencies in line with respective country legislation and framework. FMNR and enrichment planting were widely promoted across the five countries, involving a total of 64,673 farmers (27,070 women) and restoring 12,864 ha of land. A total of 796,319 trees were planted through these efforts. Further, 27,261 farmers (9,237 women) were engaged in various capacity building events such as training and exchange/exposure visits to best practice areas. These results are summarized in Table 2.1.

Table 2.1: Summary results of sub-catchment level natural resources management interventions conducted in 2017

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Farmers participating in sub catchment management activities	5,557 (1,765 w)	24,710 (8,452 w)	30,906 (18,791 w)	36,664 (17,225 w)	34,443 (15,793 w)	97,867 (62,026 w)
Number of institutions established and or trained	7	29	28	10	438	512
Members of the local institutions engaged	75 (15 w)	330 (81 w)	149 (55 w)	422 (94 w)	438	1,414 (245 w)
Area covered by sub catchment management activities ha	2,649.25	9,094	8,495	17,382	3,179	23,417
Number of farmers engaged in area closure, FMNR and tree planting activities	141 (42 w)	15,921 (5,700w)	2,621 (498 w)	2,501 (524 w)	43,489 (20,306 w)	64,673 (27,070 w)
Number of farmers trained in FMNR and tree planting	1,500 (950 w)	8,442 (2,931 w)	3,076 (1068 w)	690 (158 w)	13,553 (4,130 w)	27,261 (9,237 w)
Area covered by FMNR and tree planting ha	633	3,267	242	7,615.39	1,089	12,846
Trees planted	5,000	668,518	25,415	97,386	325,000	796,319

Other key activities included the development of water harvesting and conservation structures such as sand dams, trenches, check dams, percolation ponds, stone and soil bunds, weirs, dissipation basin, dykes that were promoted according to the country level context. The harvested water was mainly used for micro-irrigation and animal watering. Loosely linked with water harvesting were soil conservation activities where various structures were constructed to reduce soil erosion and increase water infiltration, notably in Ethiopia, Niger and Burkina Faso (Table 2.2). In addition, there were efforts to address drivers of deforestation by promoting the use of energy efficient cookstoves (EECS) in Ethiopia (10,629 farmers; 7,000 women), Niger (2,888 farmers) and Mali (997 farmers). Finally, activities aimed at improving pastoral areas, rehabilitation of cattle corridors, sustainable grazing, forage production and management resulting in 6,743 ha of land put under such interventions.

Table 2.2: Engagement in soil and water conservation activities

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Number of farmers trained in soil and water conservation	483 (20 w)	13,798 (5,457 w)	5,904 (3,807 w)	340 (40 w)	105	20,630 (9,324 w)
Land under soil and water conservation ha	49	4,871.44	248	20	21.3	5,210
Number of farmers trained in grazing management	225 (59 w)	6,601 (2,687 w)		215 (13 w)	0	7,041 (2,759 w)
Pastoral/grazing area covered ha	660	2,106.45		797.5	3,179	6,743

2.2 Work Package 2: On-farm Water and Soil Management

Agricultural productivity in drylands is always hampered by water scarcity due to drought and lack of irrigation infrastructure. In 2017, the programme engaged 51,499 farmers (17,923 women) in several on farm rain water harvesting and conservation interventions that were integrated with soil fertility and soil conservation measures. The increase in farm water supply saw a total of 10,791 farmers (4,554 women) engaging in small-scale irrigation for domestic and commercial horticultural crop production (Table 2.3). Farmers were supported to access equipment and inputs in cost-sharing or

revolving-fund arrangements, as stipulated by the country specific input access modalities. It has also been shown that although more 70% of the farmers have been exposed to these interventions, less than 12% are applying them in most countries, except for Kenya where the proportion is 83%.

Table 2.3: Results of on-farm integrated soil & water management interventions

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Number of farmers participating in soil fertility and on farm soil and water conservation	2,134	6,638 (2,215 w)	3,808 (2,616 w)	6732 (1,966 w)	13669 (5,445 w)	32,981 (12,242 w)
Number of farmers participating in small scale irrigation integrated with rainwater harvesting technologies	785 (535 w)	7,659 (2,475 w)	1,173 (761 w)	824 (678 w)	350 (105 w)	10,791 (4,554 w)
Number of farmers receiving material support	132 (117 w)	7,374 (2,446 w)	61 (21 w)	97 (95 w)	1,250 (338 w)	8,905 (3,017 w)
Farmers applying the knowledge and skills insitu soil and water conservation technologies (SWC)	72%	77%,	80%	84%	84%	
Farmers applying non-insitu water harvesting practices	0%	48%	63%	4%	11%	

Further, more than 50,000 farmers participated in capacity building events and gained knowledge and skills in conservation agriculture (CA), good agronomic practices (GAP), and integrated technology package (CES/DRS works involving composting, micro-dose, crop rotation, mulching, organic manure application, etc.). Farmers also received equipment for CA on cost-sharing basis. Results of an uptake survey conducted in late 2017 revealed that farmers applying integrated approaches of soil fertility, soil and water conservation are more than 80% in Ethiopia, Mali and Niger and slightly lower in Burkina Faso and Kenya. On-farm agroforestry and FMNR practices were promoted with a view to improving farm productivity, reaching 37,661 farmers (12,913 women) and covering 11,665 ha of farmland across the five countries (Table 2.4). A total of 603,014 trees were planted on farmlands.

Table 2.4: Results of on-farm agroforestry, soil conservation and fertility management interventions

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Number of farmers participating in soil conservation and fertility management	3,185 (407 w)	13,590 (5,016 w)	9,658 (4,118 w)	6,732 (1,966 w)	18334 (6,416 w)	51,499 (17,923 w)
Number of farmers trained on SWC & soil fertility practices	2,980 (205 w)	9,867 (3,179 w)	6,414 (2,234 w)	3,010 (615 w)	18,850 (942 w)	41,121 (7,175 w)
Area covered with SWC and fertility practices (ha)	2,649	4,537	300	1,797	15,834	25,117
Farmers applying integrated on-farm soil, water management and soil fertility practices	74%	84%	62%	88%	84%	
Farmers applying fertility management and integrated SWM	77%	77%	88%	93%	90%	
Number of farmers engaged in agroforestry and on-farm FMNR	2,172 (724 w)	6,477 (2,817 w)	884 (455 w)	4669 (260 w)	23,459 (8,657 w)	37,661 (12,913 w)
Trees planted on farm	45,176	207,423	25,415	25,747	325,000	603,014
On farm land under tree planting ha		2,409.66	13.5	5,682	3,560	11,665

2.3 Work Package 3: Agricultural Commodity Production

The programme reached a total of 64,498 farmers (22,783 women) with information on climate smart production (CSP). The 2017 uptake survey revealed that 33,179 farmers (9,583 women) were practicing CRP approaches. Most of the farmers surveyed had adopted options relating to sustainable production and adaptation, while technologies aiming at mitigation of climatic extremes were observed to be less adopted in most countries. To facilitate extension, information dissemination and institutional development, several farmer organizations were established and / or supported to engage in climate smart production. Thus, 726 farmer groups with a membership of 19,904 farmers (7,688 women) were trained on CSP technologies and practices. In addition, 563 market oriented production plans were developed for both farmer groups and individual farmers (Table 2.5).

Table 2.5: Participation in climate smart production options

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Farmers reached by climate smart production interventions	2,784 (1,023 w)	23,422 (7,627 w)	7,759 (3,393 w)	10,642 (5,427 w)	12,788 (5,312 w)	64,498 (22,782 w)
Farmers engaged in climate smart production options/ practices	62%	92%	42%	54%	100%	
- Sustainable production	38%	78%	14%	82%	82%	
- Mitigation	48	97%	29%	54%	54%	
- Adaptation	100	97%	99%	100%	100%	
Farmers applying CSP interventions	2258 (918 w)	10,880	2707 (1,883 w)	7,103 (2,486 w)	10,230 (4,296 w)	33,179 (9,583 w)
Number of producer groups supported	545	74	15	50	42	726
Membership of groups	985	6,362 (2,259 w)	5345 (3,939 w)	3556 (668 w)	3,655 (822 w)	19,904 (7,688 w)
Plans developed	368	115	46	3	31	563

Access to finance and agricultural inputs remains central to increasing technology adoption. The programme sought to facilitate this through the establishment of input supply systems that are accessible to farmers yet remaining robust and sustainable. Capacity building events reached a total of 19,089 farmers (8,493 women), while 774 farmer groups were supported. Different countries adopted different forms and modalities of input supply systems, depending on experience, local context of the farmers as well as the guiding legal framework with regards to input access. Five modalities were supported namely; i) community-based seed supply system linked to private seed companies in Kenya, ii) cooperative model linked to local government support systems in Ethiopia, iii) agro-dealer model of supporting local stockists to supply subsidized inputs in Niger; iv) input and seed fairs facilitating supplier linkages, exchange and information sharing with farmers in Burkina Faso, and v) warrantage systems in Mali. Inputs accessed included improved /certified seed varieties, micro irrigation kits, locally selected/ improved breeds; agro-chemicals, livestock feed, medicines and vaccines, and agricultural tilling and processing equipment. These efforts resulted in farmers covering 27,214 ha of farmland with under climate smart production practices (Table 2.6).

Table 2.6: Establishment and engagement in input supply systems

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Farmers participating in capacity building events	3,149 (933 w)	2853 (905 w)	2,382 (1,228 w)	10 642 (5,427 w)	63	19,089 (8,493 w)
Number of groups supported	545	32	151	42	4	774
Number of farmers in the	640	7,408	3,103	1,965	31	5,739

supported groups		(2,953 w)	(2,087 w)			(5,040 w)
Land under CSP ha	1,506,25	4,537	1,100	6,231	15,346	27,214

2.4 Work Package 4: Enhancing Market Access

The programme endeavors to contribute to the development of rural economy and transition of thousands of smallholder farmers from subsistence to commercial production by facilitating increased commodity production and access to sustainable markets. A total of 26,446 farmers (15,988 women) were reached with market linkage interventions across the five programme countries, out of which 20,222 (5,431 women) became linked to markets, and 23,969 (11,831 women) participated in various value chains. In addition, 870 marketing organizations were supported, reaching 17,940 farmers (8,957 women). Production and marketing of 23 value chain commodities was supported and 40-80% of the farmers adopted marketing strategies. More than 16,000 farmers were engaged in various capacity building events including the drafting of 525 business plans both at individual and group level (Table 2.7).

Table 2.7: Participation in value chain commodity marketing

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Farmers reached by market linkages interventions	3,663 (2,524 w)	11,118 (3,905 W)	5,722 (4,072w)	11,548 (5,487 w)	117	26,446 (15,988 w)
Farmers taken up marketing strategies	47%	74%	51%	84%	41%	
Farmers linked to markets		11,739	6,023 (3,556 w)	1078 (559 w)	2,460 (1,316 w)	20,222 (5,431 w)
Number of value chain commodities	7	9	5	8	5	23
Farmer groups supported	548	21	11	260	30	870
Number of farmers in farmer groups	1,591 (899 w)	2315 (735 w)	3521 (2,699 w)	10,447 (4,613 w)	66 (11 w)	17,940 (8,957 w)
Number of farmers in value chains	3,663 (2,524 w)	5,315 (1,995 w)	2,084 (1,383 w)	10,447 (4,613 w)	2,460 (1,316 w)	23,969 (11,831 w)
Business plans developed	368	73	9	42	30	525
Number of farmers trained	5,427 (3,927w)	7,951 (2,919W)	2,084 (1,383W)	756 (424W)	109 (24 w)	16,327 (8,762 w)

Key to establishing viable business are linkages to reliable markets, access to market information and post-harvest / processing technologies. A total of 309 farmer groups, involving 19,106 farmers (10,608 women), were linked to local and national markets by entering into binding verbal or written agreements. Most of the farmers (18,935, 11,317 of them women) were trained and supported to acquire appropriate processing and packaging equipment. Furthermore, the programme facilitated acquisition of knowledge and timeous access to information through value chain stakeholders' platforms and establishment of market information systems. As many as 25,750 farmers (14,282 women) were linked to market information systems and / or information service providers (Table 2.8). Although traditional information sources like radios, posters, bulletins, newspapers, posters remain popular and important for marginal areas, more rural farmers have increasingly had access to, and are being linked to mobile phone and internet based systems. In Kenya, for example, farmers in the programme have been using the *iShamba* mobile phone platform for the past two years and are able to access market information. Niger is in the process of linking farmers to a similar system hosted by ORANGE and SOLANUM whilst in Burkina Faso farmers were sensitized in the use of the AGRIDATA platform an SMS based system.

Table 2.8: Framers linked to markets and market information systems

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Number of farmer groups linked to markets	12	31	6	260	0	309
Number of farmers benefiting from market linkages	1,700 w	7,215 (2,575 w)	9,113 (5,774 w)	1078 (559 w)	0	19,106 (10,608 w)
Number of farmers trained in agricultural processing/ post-harvest technologies	7,143 (4,496 w)	3,791 (1,545 w)	7,338 (4,819 w)	265 (153 w)	398 (304 w)	18,935 (11,317 w)
Number of farmers linked to market information providers/systems	121 (32 w)	8,626 (3,889 w)	8,851 (5,606 w)	8,152 (4,755 w)	0	25,750 (14,282 w)

2.5 Work Package 5: Financial Services Linking

For farmers to invest in appropriate equipment, tools and inputs in a timeous manner, they need access to finance and financial services. Thus, the programme engaged and linked 31,421 farmers (20,909 women) in various activities aimed at increasing access to capital and financial services. Many farmers in Ethiopia (80%) and Mali (88%), and slightly less in the other three countries, were provided with information on available financial services, and / or linked to various financial service providers. However, the uptake of these services remains low (Table 2.9) due, mostly to the endemic mistrust that exists between farmers and micro finance institutions (MFIs). However, since the programme is not providing free hand-outs, awareness raising was conducted to encourage farmers to take loans to finance their enterprises. This included conducting exposure visits, training on financial literacy and financial management, reflection meetings on loan products offered by financial institutions and lobbying MFI to offer farmer-friendly financial products. A total of 31,593 farmers (16,097 women) were reached through these efforts, resulting in 10,035 farmers (3,612 women) taking loans from MFIs. In addition, membership of savings groups also increased, reaching 936 with a membership of 31,538 farmers (20,031 women) by the end of 2017 (Table 2.9).

Table 2.9: Strengthening community-based financial institutions

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Number of farmers linkage to financial services in 2017	425 (2,29 w)	8,113 (3,960 w)	5,722 (4,072 w)	8,962 (4 613 w)	8,199 (8,035 w)	31,421 (20,909 w)
Level of exposure to financial services	14%	80%	11%)	88%	34%	
Level of uptake of savings	11%	52%	13%	80%	21%	
Level of uptake credit	8%	25%	6%	17%	9%	
Number of farmers borrowing from MFIs	425 (229 w)	3750	2,490 (1,942 w)	3,370 (1,441 w)	0	10,035 (3,612 w)
Number VSLAs supported/ SG/ MMD	30	157	122	321	306	936
Number of farmers in VSLA membership	2,155 (1,413 w)	3281	5,722 (4,072 w)	10,447 (4,613 w)	9,933 w	31,538 (20,031 w)
Number of farmers having access to financial information (cumulative)	213 (191 w)	10,620 (5,574 w)	9,161 (5,719 w)	10,447 (4,613 w)	1,152	31,593 (16,097 w)

Further, various forms of financial services institutions were identified and engaged, for the benefit of 10,336 farmers (3,668 women), and providing credit amounting to US\$ 427,485. Besides banks the other MFIs approached and or engaged were government funds; private and NGO portfolios and community-based savings and credit institutions which are increasingly getting popular. Availability

and accessibility of financial services to small holder farmers is dependent on the extent of the development of the financial infrastructure and liberalization of the sector in a specific country and locality. As a result, the country programmes engaged the most appropriate services. In Kenya, where the financial sector is more developed and liberalized, there is also high penetration and concentration of banks and many more financial institutions at reasonably short distances as well as wide spread mobile based services. In Niger, the key steps taken were to broker a relationship between farmers and MFIs through trust building and promoting transparency. In Burkina Faso, MFIs like UBTEC, FAARF, ASIENA and MUFEDB have been engaged, although they are yet to extend loans to farmers.

Table 2.10: Brokering linkages with financial service providers

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Number of farmers benefiting from MFIs	425 (229 w)	4,028 (2,068 w)	2,513 (1,931 w)	3,370 (1,441 w)	0	10,336 (5,668 w)
Loans accessed from MFIs USD	8,727		279,734	139,024	0	427,485
Number of financial institutions engaged	4	25	14	6	2	51
- Banks	1	1	3	2	1	8
- Govt facilities	1	1	5	1	0	9
- Other MFIs	2	7	7	0	1	19
Loans accessed from VSLAs	96 944		34,660	100,893	114,667	250,220
Number of farmers benefiting from VSLAs	4,030 (3,749 w)	3,896 (2,006 w)	2,084 (1,383 w)	2,333 (1,975 w)	1,192	13,535 (9,113 w)

2.6 Work Package 6: Local Governance & Institutional Strengthening

Sustainability of development interventions and investments is contingent on the existence, legitimacy and capacity of local level institutions. During 2017, concerted efforts were made to identify, engage and train leaders of farmer organisations and subnational level based national and local government staff. This was aimed at nurturing programme ownership as well as improve quality of services rendered to the farmers. Across the five countries leaders of 231 farmer organisations were trained in various capacity development areas, including leadership, good governance, gender, by-laws/constitutions development, cooperative management and group dynamics. Linkages and affiliations between small groups and federations were also facilitated. All this has resulted in groups becoming more cohesive, and community leaders taking more active roles in coordination of activities. Likewise, extension staff and local government staff were engaged and trained in technical and governance issues including good governance and gender, sub-catchment management, financial resources mobilization, as well as exploring and setting up of platforms for cooperation and coordination. The annual uptake survey suggested that more than 60% of farmers in Ethiopia and Niger, and less than 50% in the other countries, belong to organized farmer organisations. Very few of the farmers in Burkina Faso, Kenya and Niger had interacted with extension agents. In addition, very few of the farmers (less than 30%) are satisfied with the timeliness and quality of the services rendered so far (Table 2.11).

Table 2.11: Strengthening existing and mobilizing new farmer organizations

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Farmers in FOs	36%	80%	46%	42%	64%	
FO leaders and members trained	1,149 (933 w)	1,588 (423 w)	387 (294 w)	1,448 (274 w)	422 (148 w)	4,994 (2,072 w)
FOs	71	72	55		33	231
Number of governance and	60	72	35	9	920	1,096

extension staff attending technical training	(8 w)	(14 w)	(10 w)			(32 w)
Number of local leaders and extension staff attending governance training	86 (35 w)	268 (73 w)	449 (183 w)	176 (29 w)	422 (148 w)	1,401 (468 w)
Farmer satisfaction with timeliness	15%	44%	25%	36%	10%	
Farmer satisfaction with quality	15%	41%	24%	39%	9%	
Reported interaction with extension agents	11%	81%)	28%	85%	8%	

2.7 Work Package 7: Planning, M&E, and Scaling of Learning

The Planning, Monitoring, Evaluation and Learning (PMEL) framework remains a critical component of the programme. Key result areas are i) the tracking of programme targets, ii) engagement of farmers and local stakeholders in learning and sharing and iii) the generation, and communication of lessons and evidence for scaling up. In all, the countries planning and review meeting engaged many farmers and stakeholder; 5,383 including 1,957 women. In addition, each country conducted two joint quality monitoring events which sought to ensure that the programme adhered to the scaling principles and core values set at the start of the programme. In some instances, this activity revealed deep rooted problems that led to the complete overhaul of the consortium (Niger and Burkina Faso). In most instances it facilitated cross learning and instilled confidence in the positive changes being experienced and or witnessed by farmers and stakeholders. The uptake survey did confirm some of the positive changes by showing that there were high levels of exposure in most interventions but low uptake. Notwithstanding, a total of 147,527 farmers (66,126 women) were reached by various interventions in 2017 and cumulatively 194,623 farmers including 84,931 women since 2015. This means the programme achievement is at 86% towards the programme target of 227,000 farmers and more than 70% towards reaching work package 1-5 targets (Tables 2.14 and 2.15). Achievement for work packages 6-8 remain low since most of the activities are dependent on the farmer support activities of work packages 1-5. However, confidently computing these figures has remained a challenge and during the year a process of developing a programme database was initiated, to be launched in 2018. The use of this database will go beyond the programme life as it will continue to be analyzed and inform various initiatives and the further programming of DryDev.

Table 2.14: Participatory of stakeholders in monitoring and evaluation activities

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Programme
Stakeholders participating in Review and Reflection meetings	985 (720 w)	1,779 (343 w)	664 (263 w)	1,535 (596 w)	420 (35 w)	5,383 (1,957 w)
Stakeholders participating in field visits	354 (35 w)	671 (185 w)	664 (263 w)	1,535 (596 w)	570 (120 w)	3,794 (1,199 w)

Table 2.15: Programme Achievements as of end of 2017

Work Packages	Burkina Faso		Ethiopia		Kenya		Mali		Niger		Programme	
	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women
WP1	5,557	1,765	30,747	10,666	6,523	4,213	36,664	17,225	34,428	15,793	113,919	49,662
WP2	3,185	407	13,590	5,016	9,658	4,118	16,759	5,362	23,166	8,566	66,358	23,469
WP3	3,315	1,023	6,362	2,259	7,759	3,393	10,642	5,427	12,788	5,312	40,866	17,414
WP4	3,663	2,524	8,626	3,889	5,722	4,072	11,525	6,487	2,460	1,316	31,996	18,288
WP5	3,155	1,413	5,758	3,173	5,722	4,072	10,447	4,673	9,933	9,933	35,015	23,264
WP6	209	99	10	-	139	74	84	17	1,040	364	1,482	554
	1,149	933	2,599	895	554	319	1,448	274	25,670	11,550	31,420	13,971
WP7	22,500	17,789	1,779	343	664	263	1,535	596	291	35	26,769	19,026
WP8	276	103			206	67	30	0	1,040	364	1,552	534
	906	296	692	178	5,338	3,396	126	15	1,500	145	8,562	4,030
Total farmers	22,540	10,225	30,747	10,666	12,211	7,550	36 664	17 225	45,365	20,460	147,527	66,126

Scaling of evidence and learning

Evidence generation for decision making and scaling is at the core of the programme principles. This is to be achieved through a number of processes including documentation of lessons learnt, good/best practice stories, engaging action learning activities (planned comparisons) and co-learning events. Although co-learning is one of the key activities for generating and documenting lessons and evidence, a and few attempts have been made. the concept has not been fully integrated within the programme. The process has not progressed systematically, though some promising interventions have been identified and shared among the programme staff and with potential scaling stakeholders at various fora. These include the integrated watershed management approach in Ethiopia, rainwater harvesting and trees in Kenya, innovation planforms in Niger etc. As one way of facilitating this process, more than 5,000 farmers were engaged in action learning activities which are a participatory research aimed at generating data on option performance across contexts. In addition, farmers and sub-national level stakeholders have been engaged in many review, reflection and learning events. A major learning event was conducted in Ethiopia where all DryDev partners were represented. For documentation, communication and visibility the website has remained active with daily posting from field staff. There are efforts to revamp the website to include sections that present programme and country level synthesis at output and result which will be launched in 2018. Partners have also continued to document and publish best practices and various stories using various communication products and channels.

2.8 Work Package 8: Policy Analysis & Influencing

Policy characterization studies conducted indicated that most countries generally have policy and legal framework, but with varying degrees of gaps. The major challenge is the lack of awareness of the existence of the policies and legal framework by field and extension staff. Consequently, awareness raising was a major activity across some countries. In addition, a number of events were organized to discuss and / or review policies and strategies. Based on the two activities several communication products were produced, especially in the three Sahel countries, including policy briefs, posters and video clips. Policy influencing strategies included organization of sub-national level governance platforms to create awareness on the legal framework. These platforms attracted 1,114 people (306 women) from local government and other stakeholders. In addition, key legal instruments were reviewed, discussed and training conducted to improve local level implementation (Table 2.17).

Table 2.17: Engagement in policy influencing activities

Indicators	Burkina Faso	Ethiopia	Kenya	Mali	Niger	Total
Numbers of people attending stakeholder engagement/ platform meetings	399 (111 w)	416 (108 w)	70 (42 w)	29 (0 w)	200 (45 w)	1,114 (306wW)
Numbers of people engaged in training and awareness raising	4802 (962 w)	692 (178 w)	5,338 (3,396 w)	737 (138 w)	1,500	13,069 (4.674 w)
Policies, legal instruments strategies and plans discussed and or reviewed	Agro-silvo-pastoral policies and strategies	<ol style="list-style-type: none"> 1. Climate Resilient Green Economy (CRGE); 2. short-term Growth and Transformation Program (GTP) 3. Lease Financing Scheme for small-medium enterprises 	<ol style="list-style-type: none"> 1. Water Act 2016, Water rules 2007, 2. Makueni County Sand Conservation and Utilization Act of 2015 3. Machakos County Sand Harvesting Act 2014, 4. Kitui County Charcoal Management Act 2014, 5. Forest Conservation and Management Act 2014, 6. Agriculture and Food Authority Act 2013 7. National Government Act 2013?? 8. and Chiefs Act 1998 (Revised. 2012). 	Land Tenure Law (LFA) decree for the creation of municipal and local CoFo	Land, agroforestry park management	

3.0 PROGRAMME GOVERNANCE, COORDINATION AND TECHNICAL SUPPORT

3.1 Programme Governance & Oversight

Programme governance and oversight is one of ICRAF's major responsibilities for ensuring effective coordination, high quality delivery and timely reporting. ICRAF has continued to facilitate, monitor and manage programme performance through approaches and platforms set up at the beginning of the Implementation Phase. These include: i) regional coordination committee meetings for the Sahel and East Africa; ii) country core team meetings bringing together programme managers from the NLO and implementing partners to review approaches and manage field level work integration; iii) country technical team meetings for programme review and planning, and iv) joint quality monitoring missions aimed at ensuring interventions adhere to the programme scaling principles and core values.

Indications from this process showed that, barring some variation between countries, i) the programme was on track in terms of integration, contextual appropriateness and bottom-up processes, ii) some good progress has been made, though more is required, in ensuring cost effectiveness, environmentally and socially benign and climate smart interventions are informed by co-learning. More work needs to be done to promote inclusiveness, leveraging of partnerships with both government and private sector and ultimately achieving sustainability. Sustainability remains a challenge as most farmer organisations and local institutions do not have adequate capacity to sustain programme interventions. Strategies were developed to address most of the outstanding issues.

As part of the governance and oversight process, the 2017 session of the Programme Advisory Committee (PAC) was held in Mali to assess programme progress and make strategic recommendations, which were then incorporated in the detailed programme implementation plan for 2018. In addition, financial compliance missions were undertaken in all three Sahel countries. Furthermore, a lot of time was dedicated to supporting cohesion and functionality of the country consortia, especially in Niger after the exit of three partners, and undertaking a complete consortia overhaul in Burkina Faso where ICRAF has taken over the overall coordination responsibility.

3.2 Facilitation of Options-by-Context & Related Action Learning Activities

One of ICRAF's key technical support areas is the integration of action learning into the programme with the aim of ensuring that interventions are contextually relevant and that evidence is generated and used by farmers and other stakeholders in scaling adoption of technologies and practices. To date 5,058 farmers, across the five countries, have been engaged in 13 action learning activities and trained in various technologies and practices (Table 3.1). Preliminary results have been shared and farmers have already made decisions to change and adapt based on the lessons and evidence. Many farmers were engaged in feedback meetings that were convened in collaboration with the ICRAF-based and IFAD-funded Land Restoration Project, to review preferences and challenges in the implementation of the action learning activities to inform the redesigning and adaptation. In addition, meetings have been held at ICRAF to review progress and lessons on the integration of research into development programmes and evidence generation which has contributed to the center's programming and staffing.

Table 3.1: Action learning activities in 2017

Country	Planned Comparison	Participating farmers	
		2016	2017
Ethiopia	Tree planting practices with varying watering and mulching regimes	229	229

	FMNR and enclosure with enrichment planting	236	236
Kenya	Tree planting comparing niches, hole sizes and mulching	1,730	1,857
	Post-harvest pest control evaluating farmer practices		1,448
	Zai pits – testing sizes and mulching practices	1,362	1,580
Burkina Faso	Evaluation of the survival rate and growth of indigenous fruit tree	111 (32 w)	582 (145 w)
Mali	Evaluate the survival rate and growth of planted fodder/fruit trees under land restoration		1600 (170 w)
	Comparing survival, growth and production of in situ-grafted natural regenerated plants		238 (18 w)
	Evaluation of plant extracts in vegetable field pest control		40
	In-field water harvesting using contour bunds		562 men
Niger	Evaluating the efficiency of biopesticides and local sprayers on legumes pest and parasites control	251 (179 w)	44
	In situ grafting of indigenous fruit trees in Farmer Managed Natural Regeneration (FMNR)		433 (180 w)
	Comparing the impact of half moon and zai pits on soil restoration and biomass production	253 (81 w)	433 (180 w)

3.3 Technical Support and Capacity Development

A multi-sectorial programme like DryDev demands a wide range of skill sets and knowledge, some of which are not always available in the country teams. ICRAF working with World Vision Australia (WVA) and NLOs facilitated several capacity development events including, i) co-development of tools and approaches, ii) contributing to and or development of training materials, iii) reviewing and or providing training materials, iv) conducting training, v) guiding and or undertaking studies and vi) reviewing or contributing to the production of technical reports. Some of the tools developed and trainings conducted are shown in the box below. In total, ICRAF staff delivered training on 24 topics in 2017 (Table 3.2). Most of the training was delivered in Kenya, Mali and Niger which could be attributed to the number of action learning /planned comparison activities being implemented. More than 2,500 people (partner staff, government staff and farmers) were trained by ICRAF staff to improve quality of delivery. The training delivered focused mostly on on-farm and water conservation, institutions and governance and climate smart production and less on the other work packages.

One of the key capacity development interventions was the gender and inclusion sensitization in Burkina Faso and Niger as well as the training in Ethiopia whose outcomes were integrated into the annual DIP for 2017. In addition, with support from WVA ICRAF finalized the capacity assessment survey reports for the five countries.

Tools developed in 2017

1. Implementation strategy for WP4 and WP5 for Burkina Faso and Mali
2. Tree nursery capacity assessment tool
3. Household Pond Protocol Application – HOPPA
4. Watershed Management Protocol Application – WAMPA
5. Co-learning guidelines
6. Planned comparison profiling for the Sahel countries
7. Institutional capacity assessment
8. Uptake surveys 2017
9. FMNR protocol for Kenya

Table 3.2: Training conducted by ICRAF staff

Training description	WP	Burkina Faso	Ethiopia	Kenya	Mali	Niger	2017
1. Agroforestry concepts, practices and technologies	2				625 (59W)		625 (59W)
2. Co-learning workshops with farmers				378 (223W)			378 (223W)

3. Concepts and the process of developing and implementing the planned comparisons	7	4		1	36 (4W)	4 (1W)	24 (2W)
4. Electronic data capture methods (ODK) and analysis and synthesis of uptake survey data	7	2	2	2	19 (2W)	10 (1W)	25 (3W)
5. Farmer organization transformational leadership training	6			39 (20W)			39 (20W)
6. Gender and inclusiveness training	6		42 (4W)				42 (4W)
7. Gender sensitization in the Sahel	6	22 (10W)			40 (3W)		62 (13W)
8. Geo-spatial planning of rainwater management systems				60 (29W)			60 (29W)
9. Good governance training for local government staff	6			48 (14W)			48 (14W)
10. Improving Farmer Managed Natural Regeneration through in situ grafting of indigenous fruit trees in Niger and Mali	2				249 (18)	433 (180w)	682 (188w)
11. Innovative Strategies for Adaptation to Climate Variability and Change in the Sahel:	3	43 (5 W)			34 (4W)	30 (4W)	107 (13W)
12. Institutional development	6		41 (3)	33(10W)	40 (2W)	23 (4W)	137 (19W)
13. Monitoring and evaluation training including LQS	7	2	2	2	2 (1W)	2	10 (1W)
14. Nursery establishment and management practice	2			59 (26W)	14 (1W)		73 (27W)
15. Participatory Integrated Climate Services for Agriculture (PICSA)	3	5 (1 W)				271 (107W)	276 (108 W)
16. Post-harvest pest management	3			1109 (836W)			1109 (836W)
17. Sahelian bocage technique	2	43 (5W)					43 (5W)
18. Siting, surveying, designing and construction of the farm pond using – HOPPA.	2			130 (26W)			130 (26W)
19. Sustainable seed systems in face of climate change	3	43 (5W)			34 (4W)	30 (4W)	107 (13W)
20. Training/sensitization on systemic approach to resource management in sub-catchment	1	43 (5W)			34 (4W)	30 (4W)	107 (13W)
21. Tree planting and zai pits PCs data collection	7		11	1748 (1,123W)			1,759 (1,123W)

22. Tree planting, FMNR and agroforestry	2					17 (1W)	17 (1W)
23. Vegetable field pest management	3				40 (2W)	23 (4W)	63 (6W)
24. Website development -RSR	7		5	10 (4W)			15 (4W)

Another major achievement in 2017 was the programme global reflection, sharing and learning workshop which was held in Mekelle, Ethiopia and attended by 64 people, representing all partner institutions from the five countries. Each of the implementing partners presented at least one case study sharing approaches, achievements, lessons learnt and challenges. All the 48 summaries were distributed in both French and English to facilitate learning. Interestingly, there were more cases presenting interventions on markets and financial linkages as well as on-farm soil and water conservation and climate smart production (Figure 3.1). Ethiopia contributed most case studies (Figure 3.1b).

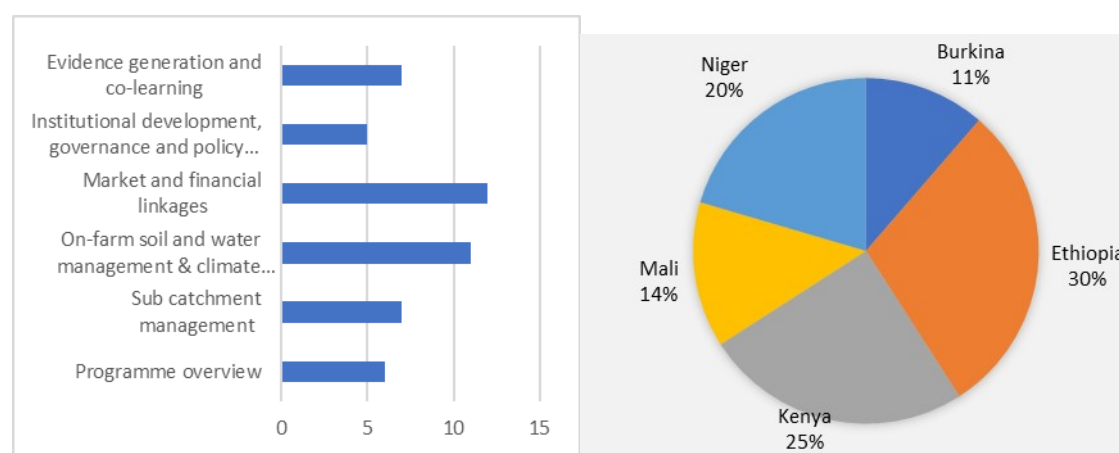


Figure 3.1: (a) Case studies presented during the 2017 programme reflection, sharing and learning workshop (left); (b) proportion of contributions per country (right)

3.4 Monitoring and Evaluation

ICRAF continued to engage the NLO M&E specialists in ensuring that the programme targets and performance are accurately and effectively captured and tracked. Several tools are being used to facilitate monitoring and evaluation. Firstly, the programme undertakes output tracking using an Excel based tool where partners track progress against programme and annual targets to report on a quarterly basis. Numerous problems have been encountered in the collection and management of this data across all countries. Thus, database development was initiated to facilitate storage, analysis and reporting. This will ensure that reports are based on an analysis rather than collation of figures from field teams which is beset with errors. Secondly, an annual uptake survey based on Lot Quality Assurance Sampling (LQAS) is used to measure programme performance against sub outcome indicators and targets. In 2017, this was conducted in all the five countries and the reports were produced at the beginning of 2018. Using data and information from these two tools and processes, the 2017 reports have been prepared.

3.4 Communication and Programme Visibility

The main communication and visibility tool for the programme is the website: <http://drydev.org/> designed and managed by Akvo. The website is being revamped to allow dissemination and sharing of programme status beyond the activity level postings by programme staff to enable communication of results and outcomes. The programme has also been on media disseminating and communicating programme activities through various means, such as:

1. the Kenya Daily Nation newspaper: <http://www.nation.co.ke/news/Water-storage-top-priority-as-the-rains-start/1056-3886706-awewfuz/index.html>

2. ICRAF Blog: <http://blog.worldagroforestry.org/index.php/2017/05/10/kenya-launches-national-program-to-harvest-rainwater/>
3. Nation Media of Kenya published this article in the Daily Nation newspaper: <http://www.nation.co.ke/news/Water-storage-top-priority-as-the-rains-start/1056-3886706-awewfuz/index.html>
4. The Star Newspaper: https://www.the-star.co.ke/news/2017/04/12/state-to-invest-in-rainwater-harvesting-to-avert-food-insecurity_c1542156
5. TUPO News: <http://tupo.co.ke/tag/kenya-billion-dollar-business-alliance/>
6. **ICRAF Transformations Biweekly**
 - i. Learning visit of DryDev Sahel Team to WEGOUBRI, the Sahelian bocage in Burkina Faso —**Vol 10 Issue 3 | 24/2/2017**
 - ii. DryDev Sahel Team meets for Annual Reflection and Planning from February 6 to 9, 2017 in Ouagadougou, Burkina Faso **Vol 10 Issue 3 | 24/2/2017**
 - iii. DryDev Niger partners and beneficiary farmers capacitated with Participatory Integrated Climate Services for Agriculture (PICSA) **Vol 10 Issue 13 | 10/08/2017**
 - iv. Improving Farmer Managed Natural Regeneration through in situ grafting of indigenous fruit trees at DryDev sites **Vol 10 Issue 13 | 10/08/2017**
 - v. DryDev Programme Advisory Committee meets to review progress in Mali **Vol 10 Issue 14 | 18/09/2017.**

3.5 Policy Analysis and Influencing

Identification, engagement and capacity building of local institutions is key to the sustainability of any programme. However, it was found that there were weaknesses in the local governance systems and institutional arrangements for facilitating production and marketing of commodities by farmers. Training materials were developed, and training conducted for institutional development in all the countries except Burkina Faso. In addition, training on farmer organization leadership and good local governance was conducted in Kenya.

The strategy used in policy influencing was to first, create awareness and improve understanding of the legal and policy framework with potential impact on project implementation and evidence scaling. The outstanding activities include proper documentation of policy constraints and discussions with policy makers at both subnational and national levels. The box below, on the launching of the Kenya Chapter of the Billion Dollar Business Alliance (BDBA) for upscaling rainwater harvesting farm ponds, is an illustration of one such success story.

The Billion Dollar Business Alliance (BDBA) in Kenya

The BDBA is a multi-sectoral alliance with membership from government, civil society, international organizations, universities, financiers (banks and micro-finance) and the private sector. The target is to construct one million farm ponds. Following this launch, the Swedish Embassy of Kenya allocated 30 million USD to the UN World Food Programme, a member of the BDBA, to support the construct of farm ponds, especially amongst the poorer communities. The Government of Kenya through the Ministry of Agriculture and Irrigation has since allocated 3 billion KES to support construction of 30,000 farm ponds in 2018¹. On October 6, 2017, The Makueni County Government also launched the BDBA and is targeting to reach 200,000 households in the next 10 years with RWH interventions.

¹ <http://www.kilimo.go.ke/index.php/2018/05/24/irrigation-permanent-secretary-professor-fred-segor-has-reaffirmed-the-governments-commitment-to-the-aims-and-objectives-of-the-billion-dollar-business-alliance-bdba/>

3.6 Scaling of Evidence and Learning

This technical support area is lagging, although several building blocks have already been established. Key activities include stakeholder mapping, analysis and engagement, identification of scaling stakeholders and facilitation of co-learning have been initiated and or completed in some cases. However, to date no scaling stakeholders have been systematically engaged due to the delayed documentation of evidence for scaling, though the process has been initiated. Farmers have been involved in action learning and co-learning events. The evidence generated has helped farmers to adapt or refine practices such as post-harvest pest control, mulching in seedling management, cost effective pit sizes, improving seedling survival and management in tree planting; maximizing Zai pit sizes in soil and water conservation interventions and using the right pest control methods for different cereals/pests. However, there are still many gaps in evidence scaling and learning, such as evidence generation, analysis and documentation from routine output tracking, action learning data collection and analysis, stakeholder platforms at community and sub-national levels for evidence sharing and scaling.

4.0 KEY CHALLENGES AND OPPORTUNITIES

4.1 Key Challenges and Constraints Encountered in 2017

- The continued departure of qualified and experienced staff from the programme was a major challenge in 2017. This arose from incidences where staff left the employment of consortium partners, and from situations where consortium institutions re-assigned experienced staff who held key responsibilities in the programme. These changes, that occurred both at the NLO and the IP levels, had the effect of reducing the momentum of programme intervention in the affected institutions.
- National politics in some countries (such as a protracted electioneering period in Kenya) and adverse security situations in others (such as in parts of programme sites in Mali and Burkina Faso) continued to limit the rate of progress in the affected intervention regions.
- Unfavourable climatic conditions, such as the short rains (October – December) of 2016 and long rains (March – May) of 2017 in Kenya; and the poor 2017 rainy season in Niger, had the effects of limiting the extent and effects of programme interventions in the areas affected.
- The changes made in the programme structure in Burkina Faso were necessary, as it resulted in developing stronger and more efficient approaches to programme intervention. However, the process of designing and implementing those changes resulted in significant amount of time being lost, as work had to stop between July and September – a period that includes the main cropping season in the country.
- Difficulties are still being felt in managing the programme consortium partnerships in some countries. Mali has had difficulties with late submission of progress reports by some implementing partners, while Niger wrestled with low level commitment and poor performance by three of its consortium partners, leading to their ultimate removal from DryDev.

4.2 Opportunities Identified in 2017

- Opportunities exist for the DryDev teams to work closely with the various arms of government (national or regional) in all programme countries. These opportunities are even greater where DryDev interventions are aligned (wholly or to some degrees) with government plans, such as in Ethiopia and Burkina Faso. Such alignments and partnerships with government and non-governmental agencies enable the programme to leverage and integrate government resources (human, material and financial) at the local level
- The expansion of ICT and mobile telephony networks has enabled programme teams, in nearly all target countries, to enhance technology dissemination and uptake of improved production technology, as well as the provision of weather and market information.

5.0 LESSONS LEARNED

5.1 Working with Partners

- Strengthening partnerships with various stakeholders, including government departments, NGOs, and input and service providers, and conducting joint monitoring was mutually beneficial to the programme and stakeholders, allowing the programme to facilitate beneficial linkages for farmers and farmer organizations, and to gain deeper insights and learning. Knowledge transfer through training workshops, field demonstrations and exchange visits were effective means of sharing and learning.
- The global programme review, reflection and sharing workshop held in August 2017, in Mekelle, Ethiopia, was an excellent opportunity for different country teams and partners to learn from each other. One aspect that stands out was the exposure accorded to the Sahel teams to learn the approaches used on sub-catchment management and automated small irrigation systems.

5.2 Good Practice/Innovation

- The DIY solar-powered drip-irrigation kits that were pilot-tested in Kenya, and the modern solar pumps used in Mali and Niger are good innovations for reducing work load and enhancing irrigation efficiency.
- The development of a country database of beneficiaries was judged as an important step towards ensuring good and accurate data capture, and a means to eliminate the risks of double-counting.

5.3 Communication

- An effective and smooth communication must involve partners at all levels – ICRAF, NLOs and IPs. Best practices and lessons shared through various visits and activities, including the DryDev website, videos, country-based brochures and pamphlets, etc. have enabled programme staff, beneficiaries and other stakeholders to continuously learn from one another.
- Communication and documentation remains a challenge for many country teams. Some countries (notably Ethiopia and Mali) have tended to seek and use external consultancy firms to provide the needed support.

5.4 Programme Management

- The annual meeting of the programme advisory committee (PAC) in different target countries has proved useful in providing context-specific guidance to the programme. The 2017 PAC meeting held in Mali, attended by country coordinators from all programme countries, and the report that followed, were most beneficial to both ICRAF and the country teams.

6.0 COUNTRY REPORTS

6.1 ETHIOPIA

The DryDev programme in Ethiopia is implemented in 29 sub-watersheds (SWS) in six districts (or *woredas*) of two regional states: Oromia (Boset, Gursum and Jarso *woredas*) and Tigray (Tseada Emba, Kilite Awulalo and Samre *woredas*). The programme is being implemented by three organizations, namely, World Vision Ethiopia (WVE) as the national lead organization (NLO) and implementer in Oromia and Tigray regions, Relief Society of Tigray (REST) implementing in Tigray region and Ethiopian Orthodox Church — Development and Inter Church Aid Commission (EOC-DICAC) implementing in Oromia region. The activities carried out in Ethiopia in 2017, and results obtained, are described in Sections 6.1.1 to 6.1.8.

6.1.1 Work Package 1: Sub Catchment Level Natural Resources Management

As of end of 2017 a total of 24,710 farmers (8,452 women) were mobilized for natural resource management (NRM) activities in Ethiopia, resulting in 9093.86 ha covered by sub-catchment rehabilitation activities and context specific and appropriate physical and biological soil and water conservation measures.

- **Activity Area 1.1: Establish and/or strengthen community watershed teams.**

To enhance the communities' capacity to execute programme activities and improve the leadership quality of Community Sub-Watershed Teams (CSWTs), a total of 14,517 CSWT members and farmers (5,028 women) were engaged in the 29 SWSs through trainings on integrated watershed development and management; gender mainstreaming; local institutions development and good governance; experience-sharing events; SWS action plan development; reflection discussions on previously developed by-laws, action plans and SWS management (Table 6.1).

Table 6.1: Community Sub-Watershed Teams strengthened during 2017

Woreda ²	Number of CSWTs	Number of CSWT members			Number of CSWT and community members trained & capacities strengthened on IWSM		
		Men	Women	Total	Men	Women	Total
Boset	5	30	5	35	631	94	725
Gursum	4	64	2	66	2,360	1,030	3,390
Jarso	4	40	8	48	1,566	378	1,944
K/Awulalo	4	42	23	65	1,344	1,219	2,563
Samre	4	35	25	60	1,975	1,296	3,271
T/Emba	8	38	18	56	1,613	1,011	2,624
Total	29	249	81	330	9,489	5,028	14,517

During the implementation of these activities, key local government sectors (such as woreda-level offices of agriculture, cooperative promotion, water development, trade & industry, kebele³ managers, kebele chairman and development agents) were engaged to provide training to farmers. They also participated in follow-up meetings, thereby contributing to the sustainability of those CSWTs.

- **Activity Area 1.2: Development of sub-watershed action plans.**

The programme, in collaboration with the relevant woreda offices' support and communities' engagement, prepared and reviewed participatory sub-watershed (SWS) action plans. A total of 16

² Woreda is equivalent to a district

³ Kebele denotes the smallest administrative unit, similar to a ward or neighbourhood

management plans and 25 SWS action plans were developed and reviewed in the 29 SWS. Resources (labour and materials) worth US\$ 681,839 were leveraged for sub-catchment management activities from the community and from relevant woreda-level government sectors such as agriculture and natural resources; water, irrigation and electricity, and mining.

- **Activity Area 1.3: Rehabilitate degraded land through tree-planting & FMNR practices**

As part of leveraging local resources, a total of 24,710 farmers (8,452 women) were mobilized for the work of rehabilitating degraded landscapes in 2017, in which a total area of 9,093.86 ha was rehabilitated with biological and physical measures. Of this number, a total of 15,921 farmers (5,700 women) were engaged in establishing biological measures, such as area closure integrating farmer-managed natural regeneration (FMNR) and/or multi-purpose tree-planting (also referred to as enrichment planting) covering 3,267 ha (Table 6.2).

Table 6.2: Number of community members mobilized and area covered with biological conservation measures during 2017

Woreda	Farmers mobilized for area closure, FMNR and tree planting			Area covered in area closures with FMNR and/or enrichment planting (ha)	Number of trees accessed & planted
	Men	Women	Total		
Boset	736	223	959	59	5,400
Gursum	3,151	1,128	4,279	412	97,896
Jarso	683	187	870	289	250,900
K/Awulalo	1,355	583	1,938	924	136,659
Samre	1,536	964	2,500	776	35,793
T/Emba	2,760	2,615	5,375	807	141,870
Total	10,221	5,700	15,921	3,267	668,518

To enhance restoration of degraded areas, 8,442 farmers (2,931 women) were trained on FMNR, area closure and tree-planting. This was reinforced by exposure visits to sites with best practices on closure management and enrichment planting. In Boset, Gursum, Jarso and T/Emba woredas, six community nurseries were provided with different nursery inputs and training provided for nursery technicians. Following these activities, a total of 668,518 adaptable multi-purpose trees of *Azadirachta indica*, *Grevillea robusta*, *Sesbania sesban*, *Melia azedarach*, *Acacia saligna*, *Azadirachta indica*, *Moringa*, *Jacaranda*, *Olea africana*, *Cordia africana*, *Eucalyptus camaldulensis*, *Juniper*, *Leucaena leucocephala*, *Acacia albida*, *Cupressus lusitanica* and *Eucalyptus globulus* species were raised and planted in identified communal areas.

- **Activity Area 1.4: Introduce / strengthen soil conservation & water-harvesting structures**

To rehabilitate the sub-catchments through context-specific soil and water conservation (SWC) measures, a total of 13,798 community members (5,457 women) were provided with theoretical training and practical demonstrations of soil and water management technologies in all six woredas. Following this training and sensitization, a total of 24,710 community members (8,452 women) took part in the construction of different types of physical structures (trenches, check dams, percolation ponds, stone and soil bunds) running 584.5 km and storing up to 994,645 m³ of water covering 4,871.44 ha of degraded land (Table 6.3).



Reshaped gully in Endapetros SWS, T/Emba (left) and community members of Osole SWS, Boset (right), constructing stone-faced terraces

Table 6.3: Trained and mobilized farmers for sub-catchment SWC across six districts in 2017

Woreda	Farmers participating in capacity building on SWC			Farmers mobilized for SWC			Area covered (ha)
	Men	Women	Total	Men	Women	Total	
Boset	634	191	825	3,558	1,659	5,217	149.5
Gursum	2,136	971	3,107	2,429	993	3,422	1,103
Jarso	581	115	696	5,027	692	5,719	752
K/Awulalo	1,215	1,187	2,402	1,772	1,886	3,658	470
Samre	1,590	1,308	2,898	1,336	1,002	2,338	1,750.94
T/Emba	2,185	1,685	3,870	2,136	2,220	4,356	646
Total	8,341	5,457	13,798	16,258	8,452	24,710	4,871.44

- **Activity Area 1.5: Mitigation measures on drivers of deforestation promoted**

To mitigate the effect of drivers of deforestation, the programme provided training on the causes and impact of deforestation, and use of energy efficient cookstoves (EECS) for 4,794 farmers (2,731 women) in all woredas, except for Jarso. A total of 10,629 farmers (7,000 women) were provided with different types of EECS and solar technologies (except in Boset) through their cooperatives via technology accessing modality. Four EECS producer groups were established (one each in Samre and T/Emba, and two in K/Awulalo) to promote production and use of EECS by communities.

- **Activity Area 1.6: Enhance sustainable grazing management**

Uncontrolled grazing is a major driver of degradation in communal lands and on-farm areas in Ethiopia. This aggravates soil erosion and deterioration of natural resources as well as reducing the productivity of livestock. To mitigate these challenges, training on sustainable grazing management, facilitating forage grass and legume production and management was provided to 6,601 farmers (2,687 women) across DryDev woredas. Working in coordination with relevant government offices, 5,293 farmers (1,769 women) accessed improved grass and legume seeds, resulting in 2,106.45 ha of communal grazing land being restored in each woreda (Table 6.4).



Forage seed production in Boset (left) and sustainable grazing management using a cut-and-carry system in Dimello SWS, T/Emba; June 2017

Table 6.4: Farmers trained in grazing management and who received forage seeds and seedlings

Woreda	Farmers who participated in capacity-building on grazing management			Farmers who received forage seeds and seedlings			Area covered (ha)
	Men	Women	Total	Men	Women	Total	
Boset	396	198	594	453	269	722	28.5
Gursum	741	522	1,263	733	308	1,041	109
Jarso	462	330	792	497	243	740	406
K/Awulalo	780	621	1,401	647	92	739	936.5
Samre	897	401	1,298	628	446	1,074	374.45
T/Emba	638	615	1,253	528	377	905	252
Total	3,914	2,687	6,601	3,524	1,769	5,293	2,106.45

6.1.2 Work Package 2: On-farm Water and Soil Management

By end of 2017, a total of 9,867 farmers (3179 women) were reached with various context specific on-farm soil and water conservation and fertility management capacity building trainings, while 18,231 farmers (6,974 women) were mobilized for various on-farm soil and water conservation (SWC) and fertility enhancement practices. As a result, 6,955.54 ha of land benefited from various physical and biological SWC measures. The 2017 annual uptake survey of randomly selected 518 farmers from the target sub-watersheds showed that 86% of farmers had been exposed to in-situ conservation practices, another 86% were exposed soil fertility and 84% on integrated soil and water management (SWM) practices. Further, the survey revealed that 79% of farmers were practicing in-situ SWC, 94% were practicing soil fertility while 84% practiced SWM, regardless of the source of information. Similarly, 77%, 84% and 77% of farmers surveyed were practicing SWC, fertility management and integrated SWM, respectively.

• Activity Area 2.1: On-farm integrated soil & water management

To enhance and sustain farm productivity, different trainings were provided (in collaboration with each woreda office of agriculture and NRM) on soil fertility and on farm soil and water conservation to a total of 6,638 farmers (2,215 women) in all target woredas (Table 6.5). Following this training, 13,590 farmers (5,016 women) were mobilized to carry out on-farm SWC activities and 4,537.04 ha of land was covered with on-farm soil conservation and fertility enhancement options such as manuring, composting, and crop rotation.

Table 6.5: Number of community members trained and mobilized for on-farm SWC and area covered

Woreda	Farmers trained on SWC & soil fertility practices			Farmers mobilized for on-farm SWC			Area covered with SWC and fertility practices (ha)
	Men	Women	Total	Men	Women	Total	
Boset	125	36	161	373	159	532	652
Gursum	1295	575	1,870	1,758	697	2,455	864
Jarso	1,166	531	1,697	3,512	1,834	5,346	436.2
K/Awulalo	166	74	240	815	615	1,430	1,165
Samre	68	33	101	1,174	946	2,120	942.67
T/Emba	1,603	966	2569	942	765	1,707	477.17
Total	4,423	2,215	6,638	8,574	5,016	13,590	4,537.04



On-farm SWC construction in Waza SWS, Samre (left) and on-farm gabion gully treatment, Boset (right)

- Activity Area 2.2: Agro-forestry and on-farm FMNR.**

Training was provided on FMNR and tree-planting for the benefit of 6,477 farmers (2,817 women) in all intervention woredas. On-farm FMNR activities were carried out on a total of 2,386 ha of farmland. In addition, 207,423 different selected fruit trees (apple, mango, guava and avocado) and multipurpose trees were planted on 2,409.66 ha of farmland in different sites of target woredas (Table 6.6).

Table 1.6: Types of fruit and multipurpose tree seedlings accessed to farmers

Woreda	Number of on-farm trees planted	Types of seedlings accessed
Boset	2,750	<i>Grevillea robusta</i> , Mango, Papaya, Olea, <i>Melia azedarach</i> , Avocado
Gursum	19,981	Mango, Papaya, Avocado, Apple Mango, Guava, Kazmir,
Jarso	58,450	<i>Grevillea robusta</i> , Avocado, Guava, <i>Eucalyptus camaldulensis</i>
K/Awulalo	17,969	<i>Sesbania sesban</i> , <i>Grevillea robusta</i> , Papaya, <i>Ziziphus mauritania</i> , <i>Acacia albida</i>
Samre	29,633	<i>Sesbania sesban</i> , <i>Acacia albida</i>
T/Emba	78,640	<i>Sesbania sesban</i> , Avocado, <i>Acacia saligna</i> , Moringa, Apple, Mango, Kazmir, Coffee, <i>Acacia albida</i> , <i>Eucalyptus globulus</i> , Geeso, <i>Acacia seyal</i>
Total	207,423	

- Activity Area 2.3: Facilitate and support Small-scale irrigation practices and management**

To enhance the capture of rainwater and its utilization for irrigation, a total of 7,659 farmers (2,475 women) were trained on rainwater harvesting (RWH) techniques and small-scale irrigation (Table 6.7). A total of 7,374 farmers (2,446 women) are now benefiting from RWH and small-scale irrigation (SSI) on 3,307.75 ha of farmland land has been cultivated supported by various RWH structures and SSI schemes.

Table 6.7: Number of community members trained on RWH and small-scale irrigation

Woreda	Number of farmers trained on RWH & SSI practice knowledge			Number of farmers benefiting from RWH & SSI			Area irrigated by the various schemes (ha)
	Men	Women	Total	Men	Women	Total	
Boset	111	12	123	250	80	330	60.0
Gursum	1230	711	1,941	795	157	952	789.5
Jarso	623	287	910	760	593	1,353	297.5
K/Awulalo	903	618	1,521	1,314	565	1,879	712.1
Samre	1,813	624	2,437	1,264	711	1,975	1,331.9
T/Emba	504	223	727	530	355	885	116.7
Total	5,184	2,475	7,659	4,928	2,446	7,374	3,307.7

6.1.3 Work Package 3: Agricultural Commodity Production

By end of 2017, DryDev Ethiopia had reached 23,422 farmers (7,627 women) with various relevant climate smart production interventions. The 2017 uptake survey showed that 92% of the farmers are practicing climate smart production options in DryDev intervention sites on a total of 8,740 ha of farmland.

- Activity Area 3.1: Develop an efficient input supply system**

During the year 2017, a total of 7,408 farmers (2,953 women) accessed supplies of various crop and livestock inputs (seeds of improved varieties of groundnuts, haricot bean, wheat, and vegetables; improved breeds of poultry, sheep and bee colonies (locally selected)) based on the input provision modality. A total of 32 producer groups were established/strengthened for input production and distribution and 20 new technologies (with different variety or breed treated as a separate technology) and practices introduced (Table 6.8).

Table 6.8: Number of farmers linked to improved types of inputs and groups established

Woreda	No. farmers linked to crop inputs		No. farmers linked to livestock inputs		Total			No of techn.	Number of producer groups estab/strengthened
	M	W	M	W	M	W	Total		
Boset	587	265	0	0	587	265	852	3	1
Gursum	1,182	889	33	27	1,215	916	2,131	2	5
Jarso	669	358	53	202	722	560	1,282	4	7
K/Awulalo	384	294	40	48	424	342	766	5	6
Samre	305	123	50	16	355	139	494	2	9
T/Emba	811	487	341	244	1,152	731	1,883	4	4
Total	3,938	2,416	517	537	4,455	2,953	7,408	20	32

- Activity Area 3.2: Capacity development on commodity production & utilization**

The programme provided trainings on climate smart agriculture, agronomic practices, crop production and livestock management to all categories of farmers, development agents and other government officials. A total of 2,853 farmers (905 women) participated in various trainings on climate smart agriculture, and it is expected that the knowledge and skills gained through these trainings will trickle down to other household members and neighbours through farmer-to-farmer extension.

- **Activity Area 3.3: Formation and strengthening of producer groups**

To ensure sustainable production and incomes of smallholder farmers, the programme has been emphasizing on establishing and strengthening vibrant producer groups. In this context, different capacity building events were carried out for 74 producer groups from which 115 business plans were developed. A total of 6,362 farmers (2,259 women) were enrolled into various producer groups (Table 6.9).

Table 6.9: Number of producer groups strengthened and business plans developed for the DryDev-selected commodities

Woreda	Producer groups strengthened	Business plans developed for farmers	Commodities
Boset	6	9	Onion & haricot bean
Gursum	14	8	Groundnut & milk
Jarso	10	10	Potato & goat
K/Awulalo	3	55	Shoat & honey
Samre	3	18	Shoat & honey
T/Emba	38	15	Potato, tomato & poultry
Total	74	115	

6.1.4 Work Package 4: Enhancing Market Access

By end of 2017, DryDev Ethiopia had reached a total of 11,712 people (4,464 women) with value chain capacity building interventions. Furthermore, 10,073 (3,534 women) farmers have been linked to market, and 11,484 (4,848 women) were linked to various sources of market information. According to the uptake survey, 76% of farmers have been exposed to marketing strategies by DryDev Ethiopia and 74% of them are practicing the promoted strategies. The uptake survey results also showed that more people have been exposed to marketing strategies than those directly reached, recorded and reported by the programme, which indicates that a scaling up process is already happening in the intervention sites.

- **Activity Area 4.1: Promote post-harvest technologies**

To improve farmers' food security and income, 3,791 farmers (1,545 women) were trained on agricultural processing and post-harvest technologies, and 2,858 (959 women) adopted various post-harvest technologies. Twenty-three post-harvest technologies (such as use of milk-collecting and processing equipment, beekeeping equipment and protective materials, weighing balance, plastic threshing sheet and appropriate transportation or handling of crates for eggs, chicken and vegetables) were promoted and accessed through DryDev's input distribution modalities (Table 6.10).

Table 6.10: Number of post-harvest technologies promoted and number of farmers linked

Woreda	Farmers trained on agri-processing/PHT			Farmers acquired PHT			Number of PHTs promoted
	Men	Women	Total	Men	Women	Total	
Boset	177	23	200	177	23	230	2
Gursum	178	262	440	35	95	130	3
Jarso	421	139	560	296	82	378	3
K/Awulalo	516	433	949	448	170	618	3
Samre	447	360	807	281	192	473	8
T/Emba	592	374	966	662	397	1,059	4
Total	2,246	1,545	3,791	1,899	959	2,858	23

- **Activity Area 4.2: Capacity development for farmer and other value chain actors**

A total of 7,951 farmers, development agents and other value chain actors (including 2,919 women) took part in various capacity development training on value chain principles, market linkage and stakeholder management with a view to enhancing their knowledge on market concepts ability to capitalize existing markets. In addition, 73 business plans were developed and 11 market analysis studies for identified value chain commodities completed (Table 6.11).

Table 6.11: Capacity development of value chain actors

Woreda	Business plans (BP) developed	Market analysis studies completed	Capacity development in VC			Value chain platforms established/engaged	Remark
			Men	Women	Total		
Boset	1	1	356	59	415	1	Group-BP
Gursum	2	2	1,213	436	1,649	2	Group-BP
Jarso	8	2	1,298	903	2,201	2	Group-BP
K/Awulalo	55	2	1,205	790	1,995	2	50 individual & 5 groups
Samre	4	1	852	687	1,539	2	Group-BP
T/Emba	3	1	108	44	152	1	Group-BP
Total	73	9	5,032	2,919	7,951	10	

- **Activity Area 4.3: Formation and strengthening of marketing groups**

During the year, 21 producer and marketing groups were strengthened/established in Boset (2 groups) by providing training and material support; in Gursum (2 groups) and Jarso (16 groups) by facilitating the signing of agreements with buyers; and in Samre where one new group was established and trained on value chain, market linkage, post-harvest technology handling and in management and negotiation principles.

- **Activity Area 4.4: Facilitate linkages between farmer groups with sustainable markets**

A total of 7,215 farmers (2,575 women) in the target woredas were linked to local and national market traders in Addis Ababa, Adama, Harrar, Dire Dawa, Jijiga and Mekelle cities, where they were able to sell their products such as onion, milk, chicken, haricot bean, potato, and honey at competitive prices (Tables 6.12).

Table 6.12: Farmers' market destinations for selected commodities

Woreda	Farmers linked to sustainable markets			Commodity	Market destination where commodity linked
	Men	Women	Total		
Boset	526	310	836	Onion	Meftihe Horticultural Traders in Addis
				Haricot bean	Lomi Adama Farmers' Union Pulse Exporter
Gursum	213	260	473	Groundnut	Afrenkelo Farmers Union in Harrar
				Milk	Fugnan Bira Milk Processing & Value Addition Center
Jarso	742	147	889	Potato	Dire Dawa potato exporter to Djibouti
				Shoat	Harrer live-animal and Shoat meat trader
K/Awulalo	680	592	1,272	Honey	Meles Honey Union in Wukro
				Shoat	Wukro & Mekelle Shoat Traders
Samre	1,035	315	1,350	Honey	Honey Union in Samre
				Shoat	Wukro & Mekelle Shoat Traders

T/Emba	1,444	951	2,395	Tomato & potato	Adigrat University and Defense Camp
				Poultry	Egg Traders Freweyni Town to Mekelle
Total	4,640	2,575	7,215		

- **Activity Area 4.5: Strengthen market information systems**

In 2017, a total of 8,626 farmers (3,889 women) received their market information from 14 different sources, including telephone, sign boards, brochures, market information providers, the public media and others (Table 6.13).

Table 6.13: Numbers of farmers linked market information providers

Woreda	No. of market information sources	Farmers linked to market information providers		
		Men	Women	Total
Boset	2	325	93	418
Gursum	5	214	347	561
Jarso	1	425	167	592
K/Awulalo	3	1,092	868	1,960
Samre	2	1,157	1,054	2,211
T/Emba	1	1,524	1,360	2,884
Total	14	4,737	3,889	8, 626

6.1.5 Work Package 5: Financial Services Linking

By end of 2017, the DryDev Ethiopia had sensitized 10,620 people (5,574 women) on savings and credit and linked 8,113 farmers (3,960 women) to formal financial institutions, enabling them to access loans of various sizes. The report of the 2017 uptake survey shows that 80% of the sub-watershed population has been exposed to savings and credit through the DryDev programme, and that the uptake arising from direct DryDev intervention was 52%. It was also shown that the average amount of saving per person has more than doubled from US\$24 in 2016 to US\$56 in 2017. Similarly, the average size of loan per person has increased from US\$135 to US\$159 in the same years.

- **Activity Areas 5.1 and 5.2: Establish and strengthen community-based financial institutions and Linking value chain actors to financial service providers**

In 2017, 143 Village Savings & Loan Associations (VSLAs) benefited from training and material support with a view to enhancing farmers' access to inclusive financial services. A total of 5,758 farmers (3,173 women) were sensitized on saving and credit (Table 6.14). In addition, 3,281 farmers (2,005 women) were engaged with community based financial institutions like the VSLAs.

Table 6.14: Number of VSLAs strengthened / established, farmers linked to financial institutions and capacity building on saving and credit

Woreda	Number of VSLAs strengthened	Capacity building on saving and credit			Farmers linked to financial institutions		
		Men	Women	Total	Men	Women	Total
Boset	29	137	279	416	576	451	1,027
Gursum	30	23	841	864	277	737	1,014
Jarso	22	444	365	809	217	228	445
K/Awulalo	22	928	455	1,350	229	130	359
Samre	12	633	912	1,512	174	115	289
T/Emba	28	420	321	741	417	345	762
Total	143	2,585	3,173	5,758	1,890	2,006	3,896

Further, to enable every farmer to have better financial and credit service access, 42 VSLAs were linked to different financial institutions such as; RUSACOs⁴, Dedebit Credit and Saving Institute, Ethiopian Development Bank, and Oromia Insurance Company. From this, 3,896 farmers (2,006 women) farmers in target woredas were linked to different financial service providers present in their vicinity.

6.1.6 Work Package 6: Local Governance & Institutional Strengthening

DryDev Ethiopia had, by end of 2017, enhanced capacities of 202 Farmer Organizations (FOs) across the six intervention woredas. According to the 2017 uptake survey, 80% of the respondents were members of farmer groups linked to the programme. Further, 81% of the responding farmers had interacting with extension agents. However, satisfaction of the communities the timeliness and quality of service provided by these institutions remained low, at 44% and 41%, respectively.

- **Activity Area 6.1: Community institutional capacity strengthening**

In 2017, 59 community-based organizations (CBOs) were assisted to develop their by-laws while 72 institutions were strengthened through material support. The CBOs were sensitized on good governance, with a view to improving service delivery. Other participants in the sensitization events included 1,588 farmers (423 women), service providers and development agents from all woredas (Table 6.15).

Table 6.15: Number of institutions strengthened

Woreda	No. institutions strengthened through by-law development	No. institutions strengthened through material support	Materials given
Boset	2	0	
Gursum	6	6	Weighing balance, stationery and farm tools
Jarso	10	23	
K/Awulalo	20	8	Office furniture
Samre	15	33	Stationery, VSLA kits and furniture
T/Emba	6	2	Stationery, VSLA kits and furniture
Total	59	72	

Further, to enhance programme execution by Implementing Partners (IPs) and relevant government sectors, trainings were given on gender mainstreaming, institutional development and monitoring and evaluation. These events were attended by 37 people (3 women) involving DryDev staff and woreda government officers.

- **Activity Area 6.2: Creating / strengthening platforms for improved local governance**

In DryDev programme areas, woreda steering committees are providing extensive support in joint planning, reviewing, providing expertise, integrating DryDev activities in their respective office plans, leveraging resources and community mobilization. In 2017, at least two woreda steering committee meetings were held in all the six woredas, and a sum of US\$ 681,839 was leveraged to support field activities. In addition, to enable the local governance structures such as kebele leaders, development agents, and sector offices to fulfill their functions, the programme conducted training and created discussion platforms. Seven such platforms (Gursum=1, Jarso=2, Samre=1 and T/Emba = 3) composed of representatives from CBOs, government offices, community, and private institutions have been established at the woreda level to initiate discussion on existing local governance challenges and solutions.

⁴ Rural Savings and Credit Cooperative Organization



Strengthening the platform for local governance, Samre woreda

6.1.7 Work Package 7: Planning, M&E and Scaling of Learning

A total of 41 scaling stakeholders participated DryDev generated knowledge sharing events.

- **Activity Area 7.1: Programme monitoring**

In 2017 DryDev Ethiopia reached a total of 25,816 farmers (10,737 women). Table 6.16 presents the number of farmers reached in each work package.

Table 6.16: Number of farmers reached per Work Package during 2017

Work Packages	Farmers reached by DryDev Ethiopia in 2017		
	Men	Women	Total
WP1	20,071	10,666	30,747
WP2	8,574	5,016	13,590
WP3	4,103	2,259	6,362
WP4	4,737	3,889	8,626
WP5	2,585	3,173	5,758
WP6	1,704	895	2,599
WP7	1,436	343	1,779
WP8	514	178	692
Total farmers	15,079	10,737	25,816

Monitoring visits by the NLO and implementing partners were conducted regularly to support the field teams, to track programme performance and to ensure proper programme-wide implementation. Woreda-level monitoring visits were conducted with the involvement of the woreda steering committees and other key government and local stakeholders. During the reporting period, 170 monitoring visits were conducted across all woredas including those by the field teams. Farmers also participated in the monitoring of programme activities including field visits, review forums and assessments. A total of 671 farmers (185 women) farmers participated in monitoring and evaluation activities. Joint Quality Monitoring (JQM) events, involving teams from ICRAF, WVA and WVE, were also conducted in seven SWSs in Boset, Jarso and Kilite Awulalo. The JQM helped the field programme to strengthen implementation by highlighting progress, gaps, and encouraging the field team to continue with a good performance.



A JQM team visiting programme sites in K/Awulalo in May 2017

Other monitoring events in the year include

- Country core team (CCT) and technical team meetings to ensure effective coordination of the country programme
- Regular reporting and feedback activities
- Participation in ICRAF-organized events such as (a) training on ICRAF's Uptake survey in Burkina Faso (four staff members); (b) consultation meeting on the proposed Management Information System (MIS) for East Africa and the five countries (two staff members); and (c) country-level uptake survey training provided by ICRAF and WVA for 20 DryDev staff.

• **Activity Area 7.2: Participatory M&E with FOs and local stakeholders**

The programme conducted 35 participatory monitoring/learning events with farmer organizations and local stakeholders. A total of 1,779 community members (343 W) from all woredas participated in community level participatory planning and review meetings. Participants were drawn from irrigation user associations, watershed committees, cooperatives, local government bodies, producer/saving groups, other community representatives and relevant government stakeholders and experts. This process improved transparency and encouraged community contribution.

• **Activity Area 7.3: Scaling of evidence and learning**

To enhance co-learning, communication and learning among partners and stakeholders, more than 13 DryDev Ethiopia good practices and programme lessons were shared through DryDev website and two different success stories to the WVE social media page. In addition, booklets were produced by the country team to provide summarized update of achievements made by the programme. The NLO has also produced a 'value chain journey' booklet to document DryDev implementation approach and results. For scaling of evidence and learning purpose, each IP has produced booklets, leaflets, case stories, achievement summaries, videos and organized learning events.

As part of DryDev action-learning activities, tree-planting and FMNR planned comparisons (PC) have been carried out with 293 farmers (66 women) to facilitate farmer-to-farmer learning and to gather evidence on context-specific options for scaling-up. Action-learning activities are currently being conducted in four woredas, namely, Samre, Gursum, Tseada Emba and Boset in which 293 farmers (66 women) are participating. Tree-planting action-learning is being done by 173 farmers while FMNR action-learning activities are being done by 120 farmers. The major trees species for the tree-planting PC include: fruit trees (mango, avocado, papaya and guava) and multipurpose trees (*Grevillea robusta*, *Faidherbia albida*, *Cordia africana*, *Acacia saligna* and *Olea africana*). Learning and reflection lessons and evidence are being shared at kebele and SWS levels.

In addition, programme staff and enumerators were trained on Open Data Kit for data collection. Subsequently data were collected and submitted online to ICRAF. The final report for the PC activities was produced and submitted to ICRAF for review

Finally, DryDev Ethiopia was privileged to host a global programme sharing, reflection and learning workshop in August 2017. Sixty-four programme staff from all five DryDev, representing 22 organizations, participated in the event which included field visits to DryDev Ethiopia sites.

6.1.8 Work Package 8: Policy Analysis & Influencing

A total of 692 people (178 women) were involved in session on relevant policy elements discussion and dialogue forums to enhance knowledge of existing government policies and strategies, and their implementation. By end of 2017, a total of 1,472 people (410 women) had attended various policy awareness meetings

- **Activity Area 8.1: Develop further evidence on identified constraints in policy implementation**

Policy review studies indicated that there were two major challenges to the policy environment in Ethiopia, namely, (a) the lack of awareness on key country strategies, provisions and policies, and (b) limited implementation of policies. To improve the situation, DryDev initiated discussion forums with concerned government offices, contributing to the country's long-term strategies specifically, Climate Resilient Green Economy (CRGE); short-term Growth and Transformation Program (GTP), and the Lease Financing Scheme for small-medium enterprises. One platform was established in each woreda except Samre, and Kilite Awulalo could only conduct the dialogue at woreda level with government staff in the presence of 32 participants (8 women).

- **Activity Area 8.2: Stakeholder mapping and engagement**

Efforts are being made to engage those stakeholders identified from the stakeholder mapping of DryDev target areas and sector activities. A stakeholders' mapping document was produced. Different multi-stakeholder platforms have also been conducted in all woredas with identified and relevant stakeholders. These platforms supported the DryDev agenda by leveraging additional resources, integrating DryDev activities into their plans, reducing impact and influence of illegal market brokers, and enhancing co-learning and scaling. The platforms helped to address any implementation challenges that arose.

- **Activity Area 8.3: Raise awareness on policy provisions and constraints**

Various discussions were organized in DryDev target woredas on key country development policies, strategies and guidelines on natural resource management, water, Growth and Transformation Plan (GTP), food security strategy, CRGE, cooperatives, saving & credit. Also discussed were problems on existing service provision on agricultural production for the different CBOs, farmers, relevant government sector officials and experts in each intervention woreda. A total of 692 people (178 women) attended the discussion forum on policy issues (Table 6.17).

Table 6.17: Topics of policy-awareness discussions at woreda level

Woreda	Topics of discussion/policy related topics discussed	Number of participants
Boset	Food Security strategy, agriculture, environment, rural commercialization policies, and Growth and Transformation Plan	103 (39W)
Gursum	Saving and Credit Policy and Growth and Transformation Plan	130 (41W)
Jarso	Saving and Credit Policy and Growth and Transformation Plan	192 (30W)
K/Awulalo	Agricultural and rural commercialization policy	38 (15W)
Samre	Agricultural and rural commercialization policy	138 (47W)
T/Emba	Agriculture, NRM, irrigation water resources management and Agricultural commercialization	91 (6W)
Total		692 (178W)

6.2 KENYA

The DryDev programme in Kenya is implemented in three counties (Machakos, Makueni and Kitui) by a consortium of four non-governmental organizations (World Vision, ADRA, Caritas and SNV), in collaboration with county government departments and local community organizations. World Vision Kenya serves as the NLO, and also implements programme activities in Machakos County. ADRA and Caritas implement activities in Kitui and Makueni counties, respectively, while SNV supports WP4 (Enhancing market access) and WP5 (Financial service linking) across all the three counties. The activities carried out in Kenya in 2017, and results obtained, are described in Sections 6.2.1 to 6.2.8.

6.2.1 Work Package 1: Sub Catchment Level Natural Resources Management

As of end of 2017, the total number of farmers involved in landscape management and rehabilitation of degraded lands was 30,906 (18,791 women), which represents 89.5% of the total target. Approximately 10.7% (8,495 ha) of the targeted sub-catchment is now undergoing restoration using various interventions such as improved soil and water conservation, Farmer Managed Natural Regeneration (FMNR) and Enrichment Planting. Interventions on natural resource management and protection initiatives at sub catchment level were made possible through participation and leadership of the Programme Management Committees (PMCs), Water Resources User Associations (WRUAs), and community representatives.

- **Activity Area 1.1: Sub-catchment action plan development**

The Programme Management Committees (PMCs) were formalized with composition drawn from existing legally recognized institutions in the county government system in Kenya. These are known locally as sub-locational development committees in Machakos, ward development committees in Makueni, and Village councils in Kitui. To strengthen their roles in coordinating the implementation of activity plans, in collaborative monitoring and in scaling-up of learning for continuous improvement in programme delivery, 149 representatives (55 women) were trained and equipped with monitoring and evaluation tools to help them better engage in project management.

Building on the Community Action Planning (CAPs) process of previous years, DryDev programme, with the formalized PMCs representing each of the 28 sub-watersheds, collaborated with the government technical extension teams, Ward and Partnerships and Public Participation departments to co-develop coordination and monitoring plans based on the CAPs and County Integrated Development Plans (CIDPs). The various teams agreed on their own Project Management and Monitoring, Evaluation and Learning (MEL) frameworks and their own systems and processes.

Additionally, in partnership with the Water Resources Authority (WRA), Sub-catchment Management Plans (SCMPs) and CAPs were integrated in Miindu sub-catchment of Machakos to enhance collaboration between the PMCs, WRUAs, farmers and the government. Thirty-eight farmers (14 women) participated in the process. The plan provides basic information about the sub-catchment, gives an overview of the status and suggests the available local solutions/interventions.

- **Activity Area 1.2: Sub-catchment capacity development for local institutions**

Several training events were held on sub-catchment natural resources management, reaching a total of 1,233 participants (681 women) drawn from Machakos (total 180 including 97 women), Makueni (total 624 including 276 women) and Kitui (total 429 including 308 women). The capacity building initiatives included role induction, activities for integrating CAPs into SCMPs, capacity assessment and training of WRUAs, participatory planning, joint monitoring, awareness of the provisions of Water Act 2016, community disaster risk reduction and learning visits to other best performing WRUAs. The opportunities are gradually and positively strengthening communities and enhancing their voice. The WRUAs are taking an active lead in conserving riparian land and protecting catchments by prohibiting sand collecting and ensuring CBOs are registered as WRUA members.

- **Activity Area 1.3: Sub catchment restoration/reforestation through FMNR & enrichment planting**

The DryDev Programme in partnership with the Kenya Forestry Service (KFS) continued to employ various methods to disseminate skills and knowledge to communities to enhance uptake of tree nursery establishment and management, tree planting and FMNR. A total of 3,076 people (1,068 women) were reached with these interventions.

Working with FMNR trainer of trainers (ToTs), the programme also sensitized 195 primary school children (99 girls) on as agents of change to reach the larger community. As a result, 52 pupils (33 girls) have enrolled as agents of FMNR, and 5 acres of land has been set aside by one school in Machakos (Misewani) as a training site. Further, through engagements with the PMCs, community members participated in initiatives for managing and protecting the sub catchment. Five demonstration sites were established in Kitui County. A total of 2,621 farmers (498 women) implemented sub-catchment restoration, improvement and management practices on approximately 242 ha of land.



The KFS Forest Officer facilitates sensitization on FMNR at Endui Location, Kitui County

In Machakos, efforts by the programme and KFS have contributed to increased tree planting along the riparian land of Miu/Kwa Kathae and Mathauta rivers (a riparian length of 5 km) supporting livelihoods of approximately 2,500 households. The tree planting along the riparian land was in response to the SCMP developed and adopted by Mindu WRUA in Mwala.

- **Activity Area 1.4: Establishment and maintenance of water buffering**

The DryDev Programme continued to support the development and management of water buffering structures resulting in a total of 18 compliant⁵ rain water harvesting structures (8 sand dams in Makueni, 7 in Machakos, 2 sand dams and 1 earth pan in Kitui) with combined estimated storage capacity of over 500,000 m³. The communities are already utilizing the stored water for multiple purposes such as domestic use by 6,327 households, over 30,000 domestic animals and micro-irrigation for crops and tree nurseries. With these interventions, 248 ha of land has been put under improved water buffering technologies during the year. These structures were established in collaboration with the county governments' departments of water, agriculture and livestock as well as the KFS. The construction work done by contracted artisans and supervised by the programme team, county ministry of water staff and WRUAs' representatives.

- **Activity Area 1.5: Resource leveraging for water buffering infrastructure**

The programme team, in collaboration with the Water Resource Authority (WRA) facilitated the training of 189 representatives of four WRUAs (Miindu, Mathauta, Mid-Tiva and Upper Enziu) on proposal development and resource mobilization strategies. These training was aimed at empowering communities with skills in resource mobilization to sustain water buffering structures at the sub-catchment level and upscale these interventions. A total of eight proposals worth US\$ 7,000 (USD 4,000 for Kitui and USD 3,000 for Machakos) were developed and submitted to the Constituency Development Fund, County governments and Water Services Trust Fund for possible funding. A total of 189 WRUA members (92 women) participated from Kitui (133 (75 women)) and Machakos (56 (17 women)). The Programme continued to support farmers to pursue the proposals worth US\$ 40,000 formerly submitted to Kenya Community Development Trust Fund and had not been funded.

⁵ Compliant RWH structures strictly adhere to government and DryDev technical standards and protocols

- **Activity Area 1.6: Protection and Rehabilitation of denuded lands**

Meetings were held to sensitize 5,904 farmers (3,807 women) across the sub-catchments with degraded areas on principles of land reclamation/rehabilitation encompassing gully healing, tree planting, grass reseeding, terracing and sustainable charcoal production and tree harvesting. This was achieved in collaboration with the community, the ministry of agriculture and Kenya Forestry extension officers, local artisans and private sector players such as Cookswell⁶ Jikos Ltd. As a result, 749 community members (468 women) embarked on rehabilitation and restoration interventions that covered 123 ha in the three counties (Table 6.18). To further reinforce the positive response, the programme established nine learning sites of one acre (0.4 ha) each in Kitui that motivated community members to adopt the promoted technologies and measures such as trenches, reseeding, terraces, gully healing, tree planting, grass reseeding and terracing, and gully healing with gabions.

Table 6.18: Number of farmers by county engaged in rehabilitation of denuded lands

County	Numbers of Participating Farmers in sensitization meeting	Number of Farmers that embarked on rehabilitation of denuded lands
Machakos	954 (589 W)	32 (10W)
Makueni	2,789 (1,617 W)	288 (150 W)
Kitui	2,161 (1,602 W)	429 (308 W)
Total	5,904 (3,807 W)	749 (468 W)



Members of Ndithini village in reclamation site participate in development of semi-circular bunds and reseeding of grass



A 2-acre integrated demonstration plot in Syomunyu Sub location showcasing various soil conservation structures for reclaiming a denuded area

In Makueni, 58 TOTs (36 women) were trained on pasture and fodder production, and two demonstration barns were constructed in Kalawa and in Mtito Andei. Subsequently, farmers were motivated to pioneer grass seed planting on at least one acre of their land, giving a total of 16.2 ha of land. This was expected to contribute to the rehabilitation of degraded areas by stabilizing the soil. The 'cut and carry' system of harvesting the grass for livestock will also reduce erosion. Furthermore, in Nduvani in Yatta of Machakos, 32 community members (10 women) embarked on rehabilitation through gully healing, tree planting, grass reseeding, terracing and restored 0.89 ha of degraded land.

6.2.2 Work Package 2: On-farm Water and Soil Management

Over the programme implementation period, a total of 9,658 farmers (4,118 women) were reached with various context-specific on-farm soil and water conservation and fertility management practices

⁶ Cookswell Jikos is an upcoming Kenyan based Company that make charcoal and wood fueled stoves, portable convection ovens, BBQ's, smokers, space heaters and improved charcoal making kilns.

promoted through different farmer learning events and engagements. The 2017 uptake survey, conducted towards the end of the year, found that 92% of farmers had knowledge of soil and water conservation (SWC) technologies and 53% had been exposed to the interventions by the programme. A high proportion of the farmers (85%) were already applying the knowledge and skills acquired in their farms. On soil fertility management practices, 80% of the farmers surveyed indicated that they had knowledge of the practices and 31% got exposure to various options by DryDev. A higher proportion (80%) was already practicing soil fertility management in their farms. Results on the level of exposure to and uptake of non-*insitu* harvesting practices varied across all implementing sites with Mwala (39%) and Lower Yatta (38%) showing better adoption levels with Waita (11%) and Mtito Andei (10%) needing more promotion of these practices and technologies. Overall, 62% of the farmers surveyed were found to be integrating various options of water and soil management, on their farms.

- **Activity Area 2.1: On-farm rain water harvesting**

Rain water harvesting (RWH) and utilization at farmers' fields was promoted through, farmer field days, exposure visits, agricultural shows, training, and participating in events such as the World Environment Day reaching 6,049 farmers (3,031 women) across three counties (Table 6.18). In addition, 34 people (8 women) including field staff, lead farmers and County Government technical extension teams participated in a training on simple geospatial methods of prospecting for ground water sources. Lead farmers who were trained have been able to identify hot spots for rehabilitation using Google Maps, and implement the promoted RWH technologies. To ensure availability of local capacity to design, lay, excavate, construct and maintain farm ponds, a total of 125 local artisans (31 women) were equipped with basic knowledge and skills and provided with necessary tools and equipment (Table 6.19). As a result, 28 farm ponds were excavated and completed as per household runoff pond protocol application (HoPPA), under the supervision of trained artisans.

Table 6.19: Participants in RWH related interventions

County	Numbers of Participating Farmers in RWH promotion events	Number of artisans trained	Number of participants in geospatial method Training
Machakos	1860 (1174 W)	56 (17 W)	8 (2 W)
Makueni	1326 (131 W)	42 (4 W)	6 (2 W)
Kitui	2863 (1726 W)	27 (10 W)	20 (5 W)
Total	6,049 (3,031 W)	125 (31 W)	34 (8 W)



A woman farmer showing her completed farm pond under HoPPA and her intercropped farm using water from the pond to micro-irrigate the crops in zai pits. The crops (maize and pulses) are integrated with trees and this has created a more conducive micro-climate

- **Activity Area 2.2: Agroforestry and on-farm FMNR**

The Kenya DryDev team continued to promote agroforestry and FMNR practices through interventions such as awareness raising sessions in public gatherings, training of selected groups and

lead farmers, review and reflection sessions with ToTs, field days and joint monitoring and technical advice in the fields. These activities engaged a total of 3,280 farmers and government technical officers (2,110 women). Training on on-farm integration of trees for fodder, fruits, timber, soil fertility among other uses and management of trees were focused on the prioritized tree species mangoes, paw paws, moringa, *Senna siamea* and *Melia volkensii* in Kitui and Neem, Melia, Calliandra, Sesbania, and Leuceana in Machakos. The training incorporated tree nursery establishment and as a result, nine trainees established tree nurseries around their farm ponds with a potential of 30,000 seedlings per season. In collaboration with Machakos Rural Resource Center, 8,000 seedlings of six varieties (*Calliandra*, *Leucaena*, *Gliricidia*, *Moringa*, *Faidherbia albida* and *Casuarina*) totaling were raised in the established tree nurseries for the tree planting under the programme's action-learning activities.



Farmers going through a training and exposure session at Syokimau Nuti Tree Nursery formerly supported by the programme; 11 (5 women) farmers were trained as tree nursery operators

A total of 884 farmers (455 women) continued to raise and plant trees despite low survival rates. As many as 25,415 assorted tree seedlings (Kitui 16,085; Machakos 9,330; Makueni 6,790) were planted on 13.5 ha. A survey by the programme team showed that 358 farmers (268 women) practiced FMNR and enrichment planting (EP) on their own farms, covering an additional area of 145 ha.

- **Activity Area 2.3: Soil conservation and fertility management**

A total of 6,414 farmers (2,234 women), including 2,864 from Kitui (402 women); 916 from Machakos (593 women) and 2,634 from Makueni (1,239 women) participated in various capacity building events/forums/training for on-farm soil conservation and fertility enhancement. These events, which also covered conservation agriculture, good agronomic practice, and field demonstration on integration of various technologies, were conducted in collaboration with the county governments and the Agricultural Technology Development Centre (ATDC) of the Kenya Agricultural and Livestock Research Organization (KALRO). DryDev also supported five farmer groups (on cost-sharing basis) to acquire a 60 HP tractor in Makueni and four two-wheeled hand tractors of 16 HP in both Makueni and Machakos. This investment was aimed at enhancing conservation tillage on farmers' fields and increasing the production of green grams, which is the most popular value chain commodity promoted among the farmers. The farmer organizations and lead farmers who were supported to acquire the conservation agriculture tools in turn supported another 1,161 farmers (738 women) to practice various conservation agriculture techniques. A total of 300 ha was put under soil conservation and fertility management practices.

- **Activity Area 2.4: Small-scale irrigation**

The programme organized various capacity building events on small-scale irrigation, in which 1,173 farmers (761 women) acquired knowledge and skills on the integration of micro-irrigation with RWH such as Zai pits, terracing, roadside RWH, cut off ditches, and farm ponds. Further, 61 lead farmers

(21 women) were provided with material support to enhance their efforts in water harvesting and micro-learning and extension approach. The integration of the small-scale irrigation practice and RWH through farm pond technology is increasingly appreciated by most farmers.



Lead farmers being trained on how to use solar pumps for micro irrigation after being supported with micro-irrigation tools by the programme

6.2.3 Work Package 3: Agricultural Commodity Production

By end of 2017, a total of 10,618 farmers (7,605 women) had been reached with climate smart production (CSP) options for subsistence and markets. The 2017 uptake survey indicated that 42% of the farmers surveyed were engaged in climate smart production options/practices⁷ promoted for the various value chain commodities (green grams, cowpeas, mangoes, pigeon peas, goat, honey and indigenous chicken). The survey showed that more efforts are needed to improving uptake of climate smart agriculture in nearly all the programme areas except for Lower Yatta sub-county which registered 55% farmer uptake.

- Activity Areas 3.1 and 3.2: Promotion of climate smart production for food security & income generation**

To enhance climate smart production for food security and markets, the programme reached 7,338 farmers (4,819 women) with interventions such as training on good agronomic practice, pre- and post-harvest management and development of production plans. These events were conducted in collaboration with the different county government extension teams from the ministries of agriculture and livestock across the three counties (Table 6.20). Representatives from 15 FOs (with a registration base of 5,345 farmers (3,939 women)) from the three counties were trained on market oriented production plans for selected value chains. This was aimed at boosting implementation of the business plans.

Table 6.20: Farmers reached with various climate smart (CS) production options by county

County	Numbers of participants in capacity building events on CS production options	No of farmers applying Climate smart production options
Machakos	2,457 (1,603 W)	367 (343 W)
Makueni	1,856 (1,243W)	1,436 (861W)
Kitui	3,025 (1,973 W)	904 (679 W)
Total	7,338 (4,819 W)	2,707 (1,883 W)

⁷ Climate Smart Production Options involves: those that (i) increase productivity and household income sustainably without harming the environment (e.g. improved crop and animal husbandry practices) (ii) reduce greenhouse gas emission e.g. mitigation measures such as reforestation, agroforestry practices (FMNR) (iii) enhance resilience to climate change and variability effects including reducing risks of crop failure a (e.g. diversified livestock + crop + tree systems)

- **Activity Area 3.3: Establishment of sustainable seed and seedling supply system**

Through the established community based seed supply system, 3,103 farmers (2,087 women) representing 151 farmer organizations were reached with sensitization and capacity building efforts on seed multiplication across the three counties (Table 6.21). A total of 2,339 farmers (1,640 women) from those engaged were organized into two producer groups, green gram or cowpeas, and supported (in collaboration with KALRO) with basic seed capital of 4.4 tons for multiplication. The seeds were planted in over 1,100 ha and it was estimated that, despite the erratic rainfall received in the two rainy seasons of 2017, a total of 1.5 tons of seeds will be available for the subsequent seasons, when an additional number of over 1,200 farmers will be expected to benefit.

Table 6.21: Number of farmers by county participating in the Seed system

County	Numbers of Participating in capacity building events	Number of FOs participating in capacity building events	Farmers participating in Seed Multiplication
Machakos	2,280 (1,601 W)	56	2,280 (1,601W)
Makueni	764 ((451 W)	36	0
Kitui	59 (35 W)	59	59 (39W)
Total	3,103 (2,087 W)	151	2,339 (1,640W)

A total of 144 community-based seed multipliers (33 women) were linked to six input suppliers, namely, (i) Simlaw East African Seed Company and KALRO for certified green grams and cowpea seeds, (ii) Bell industries for hermetic grain storage bags, (iii) Agriscope Company for agrochemicals and (iv) Amiran Kenya and Bernie Omodei (Measured Irrigation, Australia) for micro irrigation kits.

6.2.4 Work Package 4: Enhancing Market Access

By the end of 2017, the total farmers participating in groups supported in marketing was 5,722 (4,072 women). Farmers reached through *iShamba* mobile platform stood at 8,851 (5,606 women), exceeding the target of 6,400. Further, the annual uptake survey conducted at the end of the period indicated that 70% of farmers surveyed had knowledge of marketing strategies and opportunities from many sources, and that 51% of them had taken up these strategies, although only a small proportion of the farmers (18%) attributed their exposure to DryDev. Report on the uptake of value chain commodities showed that green gram (75%) and cowpeas (76%) were the most preferred in all the program sites. On livestock, indigenous chicken and goats were produced by 79% and 70% of the farmers, respectively.

- **Activity Area 4.1: Conduct market analysis for selected value chains**

A market-led workshop targeting the programme implementing team was attended by 63 participants (23 women). The strategies formulated from the workshop was critical in guiding market-led production interventions. Table 6.22 summarizes the focus areas in each value chain.

Table 6.22: Concept summaries of the focus areas in each value chain

Value chain	Focus area
Goats	<ul style="list-style-type: none"> • Breed improvement targeting to replace small flock size with big sized Galla goats which in turn reduce environment degradation, improve unit income and enhance sustainable production.
Chicken	<ul style="list-style-type: none"> • Lower cost of feeding by targeting home feed formulation, bulk purchase, investing in feed formulation at group level etc. • Disease control and management-new castle disease and others • Enhancing stock levels through facilitating access to hatcheries
Mangoes	<ul style="list-style-type: none"> • Increase no of trees per farmer to >50 through increased access to tree nurseries • Facilitate trainings on good agronomic practices. • Reduce post -harvest losses
Pulses	<ul style="list-style-type: none"> • Increase productivity, quality and lower cost of production through use of appropriate climate smart technologies, promote use of appropriate post-

	harvest technologies (hermetic bags/silos, tarpaulin, graders etc.) and enhancing access to affordable and quality input (seed, pest and weed management chemicals and tools, finance etc.)
Honey	<ul style="list-style-type: none"> Enhance access to modern beehives and extraction equipment Promote use of queen excluders for traditional hives Promote knowledge on apiary management

• **Activity Area 4.2: Establish and strengthen marketing groups**

The Kenya programme team facilitated the development of four bankable business plans for marketing groups (a road map to market led production), which brings the overall number of business plans developed and launched to nine. The programme also initiated input access modality⁸ through the farmer organisations (FOs) as a strategy to actualize the implementation of the production/business plans with a view to ensuring farmers access to certified seed and other farm inputs. In addition, the number of farmers linked to markets increased by 2,084 (1,383 women) during the year, bringing the total number of farmer linked to sustainable markets since programme inception to 9,113 (5,774 women). Twenty farmer leaders (5 women), representing 5,345 farmers (3,939 women), were linked with two processors and exporters of pulses – Capital Reef and Export Trading Group and East African Grain Council (EAGC). Table 6.23 presents the market access by various farmer organizations during the year.

In a bid to facilitate the formation of stronger FOs, 2,084 farmers (1,383 women) were mobilized to join larger organizations supported by the programme, such as Muungano, Mwala Mango and Mwingi Beekeepers. Five cooperatives have been registered, and have the necessary legal framework to engage with financial institutions, large buyers, input suppliers and other stakeholders.

Table 6.23: Market access by various FOs during 2017

Marketing organization/group	County	Product	Buyer/Market	Sales volume	Income (USD)	Comment
Ngengi CBO	Machakos	greengram	Simlaw Seed		1,7551	
		Chick pea	Local traders	2.7 tons	1,475	
		greengram	Local consumers	540 kgs.	522	
Mwala Fruit growers coop	Machakos	Mangoes	i)Sonic fresh	100,290 pcs	6,140	
			ii)Best tropical fruits	7000 pcs	700	
Mwingi beekeepers coop	Kitui	Indigenous chicken	Samuel Nzeki, Trader in Kasarani	56 birds	37,000	Challenge of low quantities
		Honey	Traders from different towns	109,188	81,909.9	The group suffered huge shortage of honey to meet market demand
Kaka CBO	Kitui	Indigenous chicken	Samuel Nzeki, Trader in Kasarani	14	10,000	Most of the birds aggregated by the group were precluded due to small size. Which was attributed to drought.
Makaki CBO	Kitui	Indigenous	Parkside Villa			Farmers could not

⁸ Input Access approach that involved subsidizing the FOs to acquire inputs and bring them closer to the farmers. The farmers in turn get the inputs especially closer to farm gate and at fair prices while on the other hand the FOs are supported to sustain its operation

		chicken	Kitui; Shammah hotel Masii			sustain supply to the hotels.
Muongano CBO	Makueni	Green grams	Traders	1890kgs	143,640	Due to failed rainfall the area registered very low production.

- **Activity Area 4.3: Establish multi-stakeholder value chain platforms**

The programme prioritized the establishment of county value chain platforms, in order to enhance multi-stakeholder value chain platforms. Through this, a virtual WhatsApp value chain platform managed by *iShamba* was established, bringing together 80 (39 women) DryDev farmers and other stakeholders such as input suppliers, government officers, buyers, and technical experts (Table 6.24)

Table 6.24: DryDev multi-stakeholder platforms

Farmer organization	DryDev Site	Farmer organization reps engaged	Value chains promoted by platforms
Kibwezi East farmers coop	Mtito Andei	4M, 5W	Greengram, Indigenous chicken, goat, honey
Kwinengane CBO	Yatta	3W	Greengram, Indigenous chicken, goat, Mango
Kikima	Yatta	2M, 8W	Greengram, Indigenous chicken, goat, Mango
Ngengi Farmers CBO	Yatta	6M, 4W	Greengram, Indigenous chicken, goat, Mango
Mwingi Beekeepers coop	Waita	7M, 4W	Greengram, Indigenous chicken, Honey, goat
Kilimo bora CBO	Kathulumbi - Kalawa	6M, 1W	Greengram, Indigenous chicken, goat, Mango
Mwala fruit growers coop	Mwala	8M, 2W	Greengram, Mango, Indigenous chicken, pigeon peas
Makaki Coop	Kitui - Kanyangi	6M, 4W	Greengram, Indigenous chicken, Honey, goat
Lower Yatta Coop	Kitui - Kanyangi	5M, 5W	Greengram, Indigenous chicken, Honey, goat
Total		47M, 33W	

In collaboration with the Agricultural Sector Development Support Programme (ASDSP), a total of 357 farmers from Machakos and Kitui were involved in various platform initiatives, including (i) mango, green grams and indigenous chicken-based county platforms; (ii) Machakos and Kitui trade Fairs; and (iii) Agricultural Training Center (ATC) field day in Machakos. These platforms have provided farming communities with opportunities to interact, exchange and engage with key value chain actors.

- **Activity Area 4.4: Strengthen market information systems**

To enhance access to market information systems (MIS), 6,023 farmers (3,556 women) were linked to market information providers. The number of farmers reached with market information through their mobile phones *i-Shamba* platforms had reached to 8,851 (5,606 women) by the close of the year (Table 6.25). Also, the use of Smart Projectors (also known as Digital Classroom Systems) to train farmers on various themes, reached 1,162 farmers (807 women). The projectors are currently loaded with 22 videos and several presentations, and have significantly enhanced quality of extension work, attracted new members to the groups and reduced the cost of trainings. Further, with the use of Smart Projectors and other technologies, farmers are now able to access the following linked websites for market information: [EAGC](#), [RATIN](#), [Nafis](#), [OLX-Agriculture](#), [KNBS](#), [organic farmer magazine.org](#), [infonet-biovision.org](#), [access agriculture.org](#), [don't lose the plot, shamba shape up](#).

Table 6.25: Farmers reached with MIS

County	<i>i-shamba</i>	DCS projector trainings/videos	Total Farmers reached by both
Machakos	1,062	6	112M; 190W
Makueni	1,239	6	108M; 145W
Kitui	6,550	10	68M; 376W
Total	8,851	22	288M; 711W

6.2.5 Work Package 5: Financial Services Linking

According to the uptake survey conducted towards the close of 2017, only 11% of the respondents reported being exposed to financial services, both through DryDev efforts (5%) and other sources (13%). Overall, the survey indicated that the uptake for savings and credit were 13% and 6%, respectively.

- **Activity Area 5.1: Enhance financial literacy for the producer organizations**

A total of 2,513 farmers (1,931 women) from 129 groups were given financial Literacy training, with the support of Kenya Commercial Bank, Eclof, Equity Bank, Cooperative Bank, and Pioneer Financial Services Associations (Table 6.26). Other capacity building initiatives included exposure visits of 30 farmers (19 women) to Mtito Andei Savings & Credit Cooperative Organisation (SACCO) for financial management and experience sharing, and of 46 farmers (23 women) to Kibwezi East Cooperative (Muungano) for warehousing and market led production.

Table 6.26: Farmers reached with financial literacy training

Sub County	No. of groups trained	Farmers reached	Total reached	Comment
Yatta	21	99 M, 253 W	352	The trainings facilitated by DryDev certified financial literacy ToTs in collaboration with other financial institutions
Mwala	26	140 M, 491 W	631	
Kanyangi	21	69 M, 286 W	355	
Waita	4	83 M, 368 W	451	
Kalawa	40	200 M, 568 W	768	
Mtito Andei	17	60 M, 251 W	311	
Total	129	582 M, 1,931 W	2,513	

- **Activity Area 5.2: Broker linkages with financial service providers**

Brokerage of linkages with 14 financial institutions (KCB, Equity, UTS, Vision Fund, KWFT, ECLOF, KREP FSA, WEF, YEF, Co-operative bank, MESPT, AFC, Faulu and Tetheka) was undertaken through active engagement of DryDev farmers in different forums. Despite the challenges of drought and prolonged electioneering, farmers were able to secure loans from financial institutions totaling KES 3,466,000 (US\$ 34,660). In addition, a total of 2,084 farmers (1,383 women) from 102 village saving and loans associations (VSLAs) borrowed loans totaling KES 13,840,200 (US\$ 138,402) as summarized in Table 6.27. Access to finances is enabling farmers to invest more in the commodity value chains promoted by the programme.

Table 6.27: Summary of financial access through VSLA

Sub County	Groups accessing credit	Amount	Comment
Yatta	18	5,195,700	The groups mobilize savings deposit and borrow from the same pool at an interest.
Mwala	4	633,500	
Kanyangi	11	383,500	
Mwingi	1	100,000	
Kalawa	4	502,500	
Mtito Andei	64	7,025,000	
Total	102	13,840,200	

- **Activity Area 5.3: Support Existing Savings and Credit models**

Arising from the farmer exposure visit to Mtito Andeyi Sacco, one of the FOs (Ngengi), was able to enhance their group savings to KES 2 Million (US\$ 20,000) with an intention to register as a SACCO in 2018. Also, 18 groups in Ngwata-Masongaleni from Mtito Andei, have increased the minimum instalment saving contributed by a member per month by 100%. The programme also trained 49 groups on the VSLA model and these have been enrolled on an online savings group management information system (known as Savix MIS) that supports monitoring, management and reporting of group progress. Other results from DryDev trainings include the stoppage of the practice, by most

groups, of their previous practice of operating on a 12-month cycle where they would share all the money saved and all retained earnings in that year and start afresh every year. Further, the programme, in collaboration with Kenya Union of Savings and Credit Cooperative (KUSCO), supported the establishment and registration of three SACCOs (Kibwezi East farmers, Mwingi bee keepers, Mwala Mango growers and fruit). The SACCOs are more structured and sustainable in enhancing affordable credit, assure security of savings and finance agricultural activities.

6.2.6 Work Package 6: Local Governance & Institutional Strengthening

Following a series of training on good governance since the inception of the programme, 335 local county and national government staff (101 women) have started taking a pro-active role in community mobilization for implementation of DryDev programme initiatives. To date, 1,525 farmers (802 women) from 165 farmer organizations and another 139 (74 women) from four WRUAs have been trained on governance and transformational leadership.

• Activity Area 6.1: Strengthening existing and mobilizing new farmer organizations

The programme conducted a training on institutional development for 35 staff (10 women) of the programme and extension services. The participants obtained knowledge and skills on various aspects of institutional development that would ensure adequate support to the establishment of functional and sustainable FOs as well as promotion of good and effective local governance. Partnering with the Ministry of Gender and Social Development, the programme also trained 387 people (294 women), comprising leaders and members from 55 FOs, on leadership, governance and gender (Table 6.28). The capacity of the institutions was assessed and strategies for further institutional strengthening on gaps were developed and implementation is on-going.

Table 6.28: Leadership, governance and gender trainings for FOs

County	Sub-County	Men	Women	Total	FOs
Machakos	Yatta	7	3	10	1
	Mwala	9	10	19	1
Kitui	Waita	25	167	192	10
	Lower Yatta	9	6	15	1
Makueni	Kalawa	22	53	75	32
	Mtito Andei	21	55	76	10
Total		93	294	387	55

Bi-annual performance review and follow up meetings for the FOs previously trained on governance and leadership were held at the county level, with participants numbering 89 people (56 women). From the discussions held, it was evident that the roles and responsibilities of the leaders and members had become clearer following the previous trainings on leadership and governance.

• Activity Area 6.2: Action-oriented capacity development for local government institutions

Meetings were held to explore options for coordination mechanisms for development work at the ward level were held. A total of 223 people (111 women) staff of respective county and national government, WRUA and FOs attended the meeting which discussed and adopted locational development committees in Machakos county, village councils in Kitui County and ward development committees in Makueni County. These bodies were mandated to monitor the implementation of respective county policies, and identified as the appropriate local institutions to partner with in the coordination and management of DryDev initiatives.

In addition, 226 people (72 women), involving community level county and national government staff (ward and village administrators, chiefs, assistant chiefs and village elders) were trained on aspects of good governance and gender inclusiveness. Strategies and plans to improve local governance were developed.

6.2.7 Work Package 7: Planning, M&E and Scaling of Learning

Cumulatively, the programme had, by end of 2017, reached 30,906 farmers (18,791 women) across all work packages. This was 89.5% of the programme target for Kenya of 34,500 (20,355 women).

- **Activity Area 7.1: Programme Monitoring**

The implementation of DryDev activities in Kenya, through various interventions, directly reached 12,211 farmers (7,550 women) across the three counties, representing 106% of the 2017 target (Table 6.29). Table 6.30 presents the number of farmers reached per WP during the year.

Table 6.29: Farmers reached directly through various interventions in 2017

Year 2017	2017 Targets	Farmers engaged	%	Male	Female
Machakos	3,833	4,465	116%	2,068	2,397
Makueni	3,800	2,748	72%	1,250	1,498
Kitui	3,833	4,998	130%	1,343	3,655
Total	11,466	12,211	106%	4661	7,550

Table 6.30: Number of farmers reached per WP

WPs	Target farmers	Achievement			
		Total Farmers Reached		Women Participating	
WP1: Sub-Catchment Natural Resource Management	8,400	6,523	78%	4,213	65%
WP2: On-farm Soil and Water Management	8,400	9,658	115%	4,118	43%
WP3: Agricultural Commodity Production	11,400	7,759	68%	3,393	44%
WP4: Enhancing Market Access	4,000	5,722	143%	4,072	71%
WP5: Financial Services Lining	5,600	5,722	102%	4,072	71%
WP6: Local Governance and Institutional Strengthening	300 (Local Governance)	139	46%	74	53%
	17,000 (Farmers)	554	74%	319	58%
WP7: Planning, M&E and Learning	7,200	664	9%	263	40%
WP8: Policy Analysis and Influencing	25 (Stakeholders)	103	412%		
	17,000 (Community)	5,338	29%	3,396	67%

In addition, 37 youths (18 women) and 6 staff (2 women) were trained on Lot Quality Assurance Sampling method (LQAS) and data collection methodologies, with support from ICRAF, as preparation for the annual uptake survey exercise. The annual uptake survey sampled 558 farmers from the 6 programme implementation sub-counties. The results indicated varied status in uptake of various technologies and initiatives promoted by the programme, as presented under various work packages in this report. Other activities conducted during the year include an ICRAF-convened global programme review, reflection and learning meeting in Ethiopia, Joint Quality Monitoring events by ICRAF, WVA and NLO, and participatory (annual, mid-year and quarterly) review and reflection involving programme staff and stakeholders. These interventions provided the implementing partners with technical support, corrective actions and recommendations for improving programme implementation.

- **Activity Area 7.2: Participatory M&E with FOs and local stakeholders**

Trainings were conducted to 149 members (55 women) of the programme management and coordination committee drawn from 28 sub-locations of the programme sub-catchments in Makueni (72 members; 24 women), Machakos (37 members; 11 women) and Kitui (40 members; 16 women). The trainings, which aimed to strengthen programme management, collaborative monitoring and

learning, also included government extension staff, and local administration who developed their own monitoring, evaluation and learning plans, processes and schedules. In addition, quarterly and annual review and reflection meetings were conducted, drawing the participation of 664 people (263 women), including farmers and technical teams from the government and other stakeholders across the three counties. The lessons and recommendations generated have continually informed programme planning and implementation.

- **Activity Area 7.3: Scaling of evidence and learning**

The DryDev programme in Kenya documented and produced several videos on the successes of the programme and best practices that are relevant across the target counties. These videos were shared at the programme's global review, reflection and learning workshop held in Mekelle, Ethiopia. One of the videos (on mango value chain) won an award during 8th International Forum on Food and Nutrition. The video is among the six farmer-to-farmer training materials being used for farmer training through the Digital Classroom System (smart projectors). Further, brochures that highlight the DryDev program's contribution to positive transformation in the community were also developed and distributed to various partners and stakeholders. Finally, with the assistance of ICRAF, the three planned comparison activities being implemented on pest control, Zai pits and tree planting, were monitored and lessons learnt were disseminated among the implementing parties. The preliminary results indicated that farmers were generating crucial lessons and learning from the interventions as they actively participated. For instance, Zai pits and the pest control are already being practiced by the early adopters.

6.2.8 Work Package 8: Policy Analysis & Influencing

By the end of 2017, two policy reviews and synthesis had been realized. A total of 225 local level policy implementers (77W women) were engaged in different policy discussions using the findings. In addition, 8,437 farmers (5,362 women) were reached with information on key policy provisions across the three target counties.

- **Activity 8.1: County stakeholder mapping/power analysis**

The programme organized county level stakeholders' meetings, attended by 70 people (42 women), to share and validate the stakeholder mapping reports and identify new intervention sites. The meetings, which were convened in collaboration with the respective ward administrators, appreciated the gaps and challenges brought about by poor connections among those working across multiple sectors as well as lack of cooperation and duplication of initiatives. The result of the meetings was the establishment of ward level stakeholder forums coordinated by the ward administrator, and formation of a platform for fostering synergy, sharing innovations and learnings within and across sectors. These forums provided DryDev with an opportunity to successfully deliver on the programme within a more supportive environment, learn from others, share learnings and experiences for up-scaling.

- **Activity Area 8.2: Identification of key policy constraints & possible solutions**

Meetings were held with local government officials, programme and extension staff, WRUAs and WRA officials to discuss key policies implementation and issues for county focus. A total of 206 participants (67 women) attended. Across the counties, the low community awareness on key policies and the low implementation of the same were identified as the key policy issues. This presented the need to hold village level sensitization meetings on the key policies. In addition, meetings were convened to sensitize farmers on the Water Act 2016, Water rules 2007, Makueni County Sand Conservation and Utilization Act of 2015, Machakos County Sand Harvesting Act 2014, Kitui County Charcoal Management Act 2016, Forest Conservation and Management Act 2014, Agriculture and Food Authority Act 2013, National Government 2013 and Chiefs Act 1998 (Revised. 2012). These meetings were attended by a total of 5,338 farmers (3,396 women).

6.3 NIGER

The DryDev Programme in Niger is being implemented in five municipalities (Aguié, Dogon Kiria, Droum, Malbaza and Torodi), by a consortium of seven partners (CARE Niger as the national lead organization (NLO), Oxfam Novib, World Vision Niger, Karkara, AREN, NGO RAIL, and CRESA). Each partner is responsible for implementing field level activities within one municipality, save for CARE and Oxfam who oversee the development and harmonization of the thematic approaches. However, changes were made in the programme consortium during the year under reporting. Oxfam left the programme in April, followed by CRESA and World Vision Niger towards the end of the year. The gap created by the early departure of Oxfam was filled by an NGO by the name of Mooriben, on a consultancy basis. The following Sections 6.3.1 to 6.3.8 present a report of activities carried out and results obtained in Niger during 2017.

6.3.1 Work Package 1: Sub Catchment Level Natural Resources Management

An estimated 34,443 people (15,793 women) have participated in natural resource management activities from 2015 to 2017. This strong mobilization resulted in the 3,748 ha of degraded land being covered by various restoration treatments, from 2015 to 2017. This is 43% of the targeted 10,000 ha.

- **Activity Area 1.1: Sub-catchment management plan development**

Sub-catchment action plans were developed in 2016, and in 2017 it was planned to strengthen sub-catchment management. Seven contests were organized in the communes of Malbaza and Aguié to identify and recognize the sub-catchment teams that did well in implementing their action plans. The contest was won by Laweye sub-catchment cluster in Malbaza. Further, DryDev supported the communes of Aguié, Droum, Dogon Kiria and Malbaza to set up and train 201 Community-Based Land Commissions (COFOBs) in 201 villages out of the 200 planned in 2017. These COFOBs were then provided (by the programme) with work materials such as stationery. In 2017 alone, these COFOBs issued more than 600 land transactions documents to their communities, including customary testimonies, sale certificates and guarantee attestations. The presence of COFOBs and the issuance of land transactions documents have helped to significantly reduce land disputes.

On strengthening sub-catchment level natural resources management, DryDev Niger facilitated the establishment of 22 community local agreements in Aguié (8), Dogon Kiria (7), Torodi (5) and Malbaza (2)) - out of the 33 planned in 2017. These local agreements constitute self-management tools for users of natural resources to enhance their rational exploitation. The shortfall of 11 agreements not established arose from the fact that, this activity has already been implemented in the commune of Droum by the REGIS AG project, that is financed by USAID. The DryDev Programme sought synergy and complementarity with the REGIS AG project by facilitating the broadcast of those agreements through the radio.

- **Activity Area 1.2: Capacity development in sub-catchment management**

To ensure proper sub-catchment level water resources management, the DryDev Niger programme has developed training tools (such as illustrated flipcharts) to be used by peer-to-peer community trainers. The themes covered in these tools include the water code, role and mandate of Integrated Water Resources Management (IWRM) committees, and restoration of degraded lands. A total of 58 water point management committees (out of 104 planned in 2017) were trained on hygiene, water saving, and management of water points. The training helped those committees to set rules for more sustainable use of communal water resources.

- **Activity Area 1.3: Sub-catchment pastoral areas development and management**

In 2017, the Niger programme restored 3,179 ha of pasture area, out of 3,632 ha planned for the year in the five intervention communes. Restoration actions included water and soil conservation, land restoration infrastructures, controlling the invasion of *Sida cordifolia*, and sand dune

stabilisation. The programme also rehabilitated and marked 105 km of cattle corridors for ensuring compliance with land development plans and proper herd movements (to reduce recurrent conflicts between herders and farmers). Communities working to restore degraded sites managed to produce over 170,000 seedlings of assorted trees species, as well as reforest 1,082 ha of land. In addition, 726 ha of pastoral land were seeded with grasses (Table 6.31). These activities helped to increase the available biomass by more than 70%, producing 1,184 kg/ha (dry weight) of herbaceous and woody forage in Malbaza, Koumoudutan and Ifrikawan villages. Species diversity was also improved, with the return of 4 grass species observed on these sites (*Stenium elegans*, *Eragrostis tremula*, *Dactyloctenium aegyptium*, *Schyzachyrium Exile*). To reduce soil erosion on farm-land and surrounding areas, DryDev communities built 5 dry stone dams in the commune of Malbaza, out of the 10 planned for 2017. Those dams have helped protect more than 200 ha of land that is now used for farming.

Table 6.31: Community lands developed through various practices

Commune	Clusters	Area developed through CES/DRS works (ha)	Area developed through <i>Sida Cordifolia</i> control (ha)	Number of trees planted/ha	Area seeded with grasses (ha)	Area of dune fixed (ha)
Aguié	Damama, Dan Tchiro, Guidan Galadima, Kahin Gadon Mai gaoudé	311	561	761	114	0
Droum	Mazoza, Droum	134	100	127	191	73
Malbaza	Tchourout, Nibi, Laweye, Guidan Ider et Malbaza	360	291	183	417	0
Dogon Kiria		140	0	7.5	4	0
Torodi	Kakantouti, Kobadjé, Tchouroudi	112	0	4	0	0
Total		1,057	952	-	726	73

All land development works were realized through the Gayya approach⁹. DryDev Niger's approach of working through innovation platforms ensures the mobilization of the communities by providing meals that are prepared and served at work sites. The role of the platforms is to mobilize the community to participate in the land restoration activities, to ensure proper implementation of the works and the safety and proper exploitation of the developed sites through management committees that are put in place. The programme's support towards these activities varied from US\$ 90 per ha for land restoration work on degraded lands involving construction of half-moons, earth bunds and Zai on community lands, to US\$ 18 per ha for Zai on farmlands. In addition, the programme facilitated the production of tree seedlings in community nurseries by providing seeds, plastic pots and training, for an average cost of US\$ 0.07 per plant produced against US\$ 0.3 for the same work using a cash or food for work approach. Such interventions typically invest more than US\$ 250 to restore 1 ha.

⁹ Work done collectively by communal members



CES/DRS infrastructure after a rainfall on the Kalaba site, Dogon Kiria commune



Community land restoration works in the village of Abdalla (Droum commune)



Plant production in community nurseries for planting in restored community spaces Aguié/Aguié commune



Seeding a restored pastoral area through the spreading of grass seeds in Tapkin Yaya Pasture area (Aguié commune)



Herbaceous vegetation recovery on the Kourmoudatan area in Malbaza following seeding

Two planned comparison activities were established in the communes of Malbaza, Aguié and Droum involving the following: (i) comparing the efficiency of zai and half-moons in restoring pastoral areas and; (ii) evaluating the effect of the size of planting holes on seedling survival rate. Zai pits were observed to be more efficient than half moons in restoring degraded lands, with high biomass production. The evaluation on the effects of hole size showed that deeper holes increased the survival rate of the planted trees. Following these results, the programme organized open-days at the study sites to raise public awareness on the most effective practices. More than 1,500 farmers (656 women) participated in those events.

- **Activity Area 1.4: Water buffering on sub-catchment community lands**

During 2017, the Niger programme built and rehabilitated three dams in the communes of Droum and Dogon Kiria. In the commune of Droum, one weir built on the Maissagé site helped to hold more than 21,503 m³ of water that can now be used for drinking, watering animals (local and transhumance) and irrigated farming by more than 5,000 inhabitants (2,186 women). Further, the construction of this structure has increased the recharge of the site's water table from the previous depth of 15 m to the current depth of less than 8 m. Also, more than 1.3 ha of land around the site are now used for irrigated farming by 105 farmers. In Dogon Kiria, two small dams were

rehabilitated and total capacity has increased to more than 200,000 m³ of water, which is now used for irrigation and watering animals.



Construction of the Maissagé weir in the commune of Droum



Kalaba dam rehabilitated by the DryDev Programme (Dogon kiria commune)



Dry stone dam for limiting the erosion of the Kalaba pond banks in the commune of Dogon Kiria



Deepening a pond in Torodi

The programme also developed 13 out of the 71 ponds that had been planned for. The low achievement of this output is due to the low potential of many the ponds planned for, which indicates mistakes in their initial assessment and inclusion in the plan. The 13 ponds were developed in Torodi (five), Dogon Kiria (two), Droum (one) and Aguié (five).

- **Activity Area 1.5: Resource mobilization for sub-catchment management activities**

As part of the mobilization of external resources for sub-catchment management, DryDev Niger has obtained commitment on the installation of a community radio station in the commune of Droum. This station will be used to broadcast programmes on (among other subjects) the management of natural resources and other development activities. Innovation platforms continue to use the community action plans to mobilize resources. DryDev Niger also continues to advocate for additional resources to support sub-catchment management activities.

6.3.2 Work Package 2: On-farm Water and Soil Management

A total of 23,166 farmers (8,566 women) have been reached with climate-smart water and soil management technology from the commencement of the implementation phase. By the end of 2017, a total of 18,850 farmers (942 women) were practicing promoted water and soil management technologies. According to the 2017 annual uptake survey, more than 80% of farmers have adopted at least one water and soil management technology, 35% of which is directly attributable to DryDev efforts. The rate of farmers using more than one technology attributable to DryDev support is 29%, or 6,718 farmers.

- **Activity Area 2.1: On-farm rain water harvesting**

In the year under review, the DryDev Niger team was able to construct rainwater harvesting structures to cover 1,609 ha of farm land in Droum (583 ha), Aguié (10 ha), Malbaza (911 ha), Dogon Kiria (68 ha) and Torodi (37 ha), representing 80% of the 2017 target. The structures, which included zai pits and half-moons, helped to increase the average cereal production yields from 300 kg/ha to over 900 kg/ha (>200%). The programme also supported vulnerable farmers in building 235 water ponds on their farms in Torodi (54 ponds), Dogon Kiria (82 ponds), Droum (20 ponds), Aguié (42 ponds) and Malbaza (91 ponds), for use in supplemental irrigation. This achievement falls short of the 2017 target of 243 ponds. Further, the programme disseminated the technique for establishing the *Bocage Sahelian* (integration of zai, stone walls, trenches, water storage ponds and tree planting on the same plot) in the various intervention communes. The adoption of the bocage technique enabled the tripling of yields on farmers' fields for sorghum. In addition, six perimeter gardens totaling over 60 ha were developed for 120 farmers (65 women) in the communes of Droum, Aguié and Malbaza.



Water storage ponds for supplemental irrigation on a farm in Malbaza



Use of water from a basin to irrigate a field of sorghum in Droum during a dry spell

- **Activity Area 2.2: On-farm Agro-forestry and Farmer Managed Natural Regeneration (FMNR)**

Under this activity area, DryDev Niger trained 666 peer trainers (101 women), drawn from 191 FMNR committees, on tree planting and maintenance, the forest code and committee role and mandate. FMNR committee members, who also double up as FMNR peer trainers, in turn trained 23,459 new farmers (8,657 women) on FMNR in the five target communes. More than 20,000 ha of farming land was covered and more than 325,000 trees protected. The main species protected by the communities, under FMNR activity were *Pilostigma reticulatum*, *Guiera senegalensis*, *Faidherba albida*, *Bauhinia rufescens*, *Acacia radiana*, *Combretum micranthum*, *Acacia nilotica*, *Acacia senegal* and *Zyziphus mauritiana*. These species were preferred by the communities for their ability to enhance soil fertility as well as usefulness as windbreaks, poles and fire wood and animal feed. As further support to the adoption of FMNR, the programme organized a contest in each sub-catchment for rewarding the best FMNR practitioner. A total of 43 farmers (2 women) from the communes of Malbaza and Aguié won prizes for the quality of FMNR practiced on their farms. To enrich floral diversity both in fields and in households, the programme supported the establishment of 35 private nurseries that produce and sell various types of trees, especially fruit trees. Further, inter-cluster and inter-site visits were organized by the innovation platforms in Droum, Dogon Kiria and Malbaza to sensitive farmers on FMNR. Ten exchange visits were organized in Malbaza, Droum and Dogon Kiria and 200 people (25 women) were involved. Finally, to enhance natural regeneration and conserve the environment, DryDev trained 2,888 women on the making and use of improved energy-saving cooking stoves that use less firewood.

- **Activity Area 2.3: Improving on-farm soil conservation and fertility**

In 2017, the DryDev Programme trained 18,850 farmers (942 women) on the integrated technology package (CES/DRS works, composting, micro-dose, crop rotation, mulching, organic manure

application) through 770 peer trainers (116 women). In addition, 4,200 farmers (1,436 women) were trained on biomass recycling through composting and mulching, and the establishment of bio digesters. It is estimated that about 1,000 tons of compost was produced and applied in farms by 3,343 farmers (850 women) in the commune of Malbaza alone. The quantity of compost produced in the other communes was not evaluated.

- **Activity Area 2.4: Small scale irrigation**

On the promotion of small-scale irrigation, 11 new market gardening sites, covering a total of 110 ha, were established for 1,250 farmers (338 women) in Droum, Malbaza and Dogon kiria communes. These market gardening sites were equipped with 20 x 12m deep boreholes and motor pumps in Droum and six boreholes of 50m to 100m depth with solar pumps in Droum, Malbaza, Dogon Kiria and Aguié. The programme also rehabilitated two mini-dams in Dogon Kiria and provided four SF1 mobile solar pumps. The mobile pumps will also be used to exploit on-farm rain water harvesting ponds for supplemental irrigation during the rainy season.

6.3.3 Work Package 3: Agricultural Commodity Production

A total of 12,788 farmers (5,312 women) have participated in climate-smart agriculture training courses from 2015 to end of 2017. By the end of 2017, 6,620 farmers (3,129 women) were practicing promoted production methods. The 2017 uptake survey revealed that 100% of farmers use at least one adaptation strategy such as the use of improved seeds, raising improved livestock breeds adapted to local conditions, zai pits, and the use of climate information services.

- **Activity Area 3.1: Promoting climate smart production options**

On this activity area, the Niger programme disseminated promising research-based practices to support family farm activities. The technologies advanced include in-cage poultry farming, raising hardy and prolific red goat breeds, farm mechanization by animal-drawn equipment, the use of short-cycle improved seeds, and improved methods of fish farming. A total of 3,655 farmers (822 women) from across the target communes, against the targeted 5,000, were trained on improved practices. To enable farmers to better control their production calendar and make informed decisions on farming operations such as sowing, harvesting, plowing and fertilizer application, the programme installed 35 rain gauges in the target communes. Also, eight planned comparison sites were installed in four communes for testing bio-pesticides based on two sites per commune. Learning visits, which involved 1,500 farmers (656 women), were organized to facilitate the adoption of successful options. By the end of 2017, a total of 1,331 farmers (all women) had adopted improved poultry housing and feed formulation using locally available products. DryDev also supported the promotion of semi-intensive poultry farming through the allocation of 1,250 chicks to 50 youths in the commune of Dogon Kiria. On the matter of the hardy and prolific red goats, 2,520 women acquired goats through a *Habanayé* operation (rotation of the productive herd amongst women). On farm mechanization, the programme set up 42 Farming and Processing Equipment Users' Cooperatives (CUMATs), with 450 members (all women). Women members of CUMAT cooperatives are targeted through criteria such vulnerability and availability of at least 0.5 ha of agricultural land. The programme only provided support to women in the CUMAT. Finally, the programme installed five pilot integrated farms in Droum and Malbaza, which are managed by either women alone or mixed groups in which women are active members.

- **Activity Area 3.2: Establishing/improving efficient and sustainable input supply system**

To strengthen the local agricultural input and equipment supply system, the programme trained 63 agro-dealers in quality control, negotiation and contracting techniques. The programme identified one agro-dealer in each sub-catchment to be trained on both the supply and investment plans. Of the 63 agro-dealers trained, 31 were provided with loans by the programme increase their stocks and strengthen their operations in meeting farmers' needs for agricultural inputs (improved seeds,

fertilizers, fungicides, pesticides, etc.), veterinary and animal inputs (livestock feed, vitamins, medicine), and in agricultural and processing equipment (ploughs, drill seeders, oil press, etc.). The level of support granted to agro dealers ranged from 100,000 to 200,000 FCFA (US\$ 174 to 348), depending on the needs expressed by each agro-dealer.

6.3.4 Work Package 4: Enhancing Market Access

By the end of 2017, a total of 2,460 farmers (1,316 women) were taking part in targeted value chain activities. According to the results of the 2017 uptake survey, 41% of farmers know at least one marketing strategy. Comparing the production and sales of value chain products, cowpea is the most popular value chain crop in Niger, with 87% of surveyed farmers reporting their engagement. This was followed by groundnuts with 53% of farmers.

- **Activity Area 4.1: Building country capacity in market systems and value chains**

No activity was planned in Niger, under this activity area.

- **Activity Area 4.2: Value chain group establishment and strengthening**

The stakeholders of the five value chain commodities (peanut, cowpea, sesame, poultry and sugar cane) were structured into 30 professional¹⁰ and 11 interprofessional¹¹ groups in the communes of Aguié, Malbaza, Droum, Dogon Kiria and Torodi. Table 6.32 presents these professional and interprofessional groupings of the five value chains.

Table 6.32: Value chains professionals and interprofessionals in the DryDev communes

Commune	Value chain	# professions	# Interprofessions
Malbaza	Poultry	2 (P and C)	1
	Peanut	3 (P, C, Pc)	1
Aguié	Peanut	3 (P, C, Pc)	1
	Sesame	3 (P, C, Pc)	1
Dogon Kiria	Cowpea	3 (P, C, Pc)	1
	Peanut	3 (P, C, Pc)	1
Droum	Peanut	3 (P, C, Pc)	1
	Poultry	2 (P and C)	1
	Sugar cane	2 (P and C)	1
Torodi	Sesame	3 (P, C, Pc)	1
	Cowpea	3 (P, C, Pc)	1
Total		30	11

P: Production, C: commercialization (marketing) and Pc: processing

To make those value chain professionals and interprofessionals operational, 109 leaders (24 women) were trained on value chain principles, coordination, negotiation and consultation. Further, to promote non-timber forest product (NTFP) value chains, 17 NTFP enterprises (3 in Droum, 4 in Aguié, 3 in Torodi and 7 in Malbaza) were trained on the use of management tools, production techniques, hygiene practices, and book keeping. The enterprises have 398 members including 304 women. The profits from the sale of moringa leaves, baobab and wild leaves (used as salads or ingredients for sauces) vary from US\$75 to \$120 for each enterprise. The gathering of wild leaves and fruits as well as gum arabic constitute a niche of income-generating activities especially for vulnerable women.

Meetings were convened between value chain actors to facilitate the exchange of strategic information on the commodity characteristics in demand by the market, as well as management of

¹⁰ Defined in this context as a coordinating body of actors of the same segment i.e. production, marketing and processing

¹¹ Defined here as a consisting of delegates of the three segments in a value chain are found

the supply chain. The meetings evaluated the importance of statistics on both actors and products in organizing technical support, information on supply and demand, and formation of linkages between actors. Value chain actors are also trained on negotiation, contract negotiation and formation, and marketing.

- **Activity Area 4.3: Market information system and strengthening**

DryDev Niger had planned to establish a market information system using telephony, internet messaging, and community radio to enable wide dissemination and exchange of agricultural information. In this regard, DryDev Niger formed an alliance with ORANGE and SOLANUM to provide the needed service. An EXCEL database of value chain actors was developed by SOLANUM. Other information in the database the amounts and location of cowpea, groundnuts, sesame and sugarcane available at the farms, and the level of demand by the traders. The database, which is updated each month by village sector representatives, will serve as a source for informing supply and demand. This system will be linked to the ORANGE market information system, named locally as Labarun Kasuwa. ORANGE has prepared a short messaging service to facilitate communications between value chain actors that is expected to commence in April 2018.

- **Area 4.4: Agroprocessing promotion**

DryDev Niger is seeking to strengthen the processing of sesame, cowpea, peanuts and NTFPs. To this end, the programme provided training to 55 processors (all women) on the production of new cowpea products (couscous, biscuits, spaghetti, nutritional flour, donut flour), peanut (louga, sweet peanuts, peanut snacks), and sesame (biscuits). The training also included packaging, hygiene, record-keeping and preservation of the raw material. Further, the programme provided modern oil presses and mills to 14 Farming and Processing Equipment Users' Cooperatives (CUMAT) in Droum, Malbaza and Aguié to enhance their processing operations and increase product output. A 100% increase in oil extraction was reported. The programme trained 398 members of NTFP-focused businesses (304 women) on processing NTFPs into cosmetics (lotion, soap), Balanites oil extraction, Moringa flour production, as well as aspects relating to packaging, food hygiene, storage, and evaluation of production costs.

6.3.5 Work Package 5: Financial Services Linking

From 2015 to 2017, 16,824 loans were accessed by a total of 10,051 farmers (7,933 women), amounting to 50,884,050 FCFA (US\$88,494). Also, 4,707 farmers (706 women) were linked to MFIs and benefited from several financial products, including 17,250,000 FCFA (US\$30,000) through loans for warrantage and other income generating activities.

- **Activity Area 5.1: Village savings and credit associations**

The DryDev Niger Programme conducted assessments of the capacity gaps in the 306 village savings and loan associations (VSLAs)¹² across the five target communes. From these, several capacity building activities were identified and implemented for the benefit of 49 training of trainers / village agents and cooperative organization (for 209 VSLAs) such as financial management, and implementation of revenue-generating activities. The village agents, in turn, trained and monitored the 306 VSLAs (exceeding the 300 groups targeted for 2017). The programme also facilitated the networking of communal level VSLAs with a view to strengthening them and increasing their credibility with the formal microfinance institutions (MFIs).

In 2017, the VSLAs saved US\$ 74,855 and a total of 9,933 farmers (all women) were able to access US\$ 73,494 as loans through their VSLAs. The loans granted were used by beneficiaries to finance small-scale income-generating activities like small ruminant fattening, poultry farming and the purchase of agricultural inputs (improved seeds and fertilizers) for value chain products.

¹² Known as Mata Masu Duraba (or MMD) in Niger

- **Activity Area 5.2: Link actors to financial service providers**

In 2017, the programme carried out constraints analysis to determine the factors that limited farmers' access to credit offered by MFI in the target communes. The study revealed that 60% of farmers were weak in financial management, and most of their experiences with the MFIs were characterized by false appointments, lack of transparency in MFI operations, high costs of transaction (interests, penalties, monitoring fees, guaranteed deposits, non-compliance with contractual clauses) and other factors. It was noted that farmer organisations and VSLAs engaged in warrantage without much knowledge on relevant approaches, resulting in lack of credibility with the MFIs. These findings were used to tailor critical and relevant training to the actors. In total, 1,192 farmers (all women) were linked to MFIs through those meetings.

6.3.6 Work Package 6: Local Governance & Institutional Strengthening

By end of 2017, a total of 1,198 local leaders (272 women) of grassroots institutions had the competencies and knowledge of their functions. According to the 2017 uptake survey, 10% of key local leaders and institutions scored ≥ 4 out of a grade of 5 in terms of increased capacity in competency, knowledge, and/or motivation for fulfilling their functions.

- **Activity Area 6.1: Promoting Innovation Platforms**

DryDev Niger employs the use of the Innovation platforms approach as a unifying and transformative organ for the farmer organizations, local talents, leaders and the youth in their communes. The innovation platforms formed by DryDev and play important role in coordinating development actions, mobilizing the communities and advocacy for change and development. In 2017, the programme trained a total of 920 newly-elected officials of the five innovation platforms on their roles and responsibilities, regulations, and leadership. In addition, 63 representatives of the innovation platform executive boards were trained on administrative and financial management. The training enabled innovation platforms to better manage the financial resources (amounting to US\$ 14,178) mobilized through membership fees and grants from DryDev and other projects. Currently, 422 farmer organizations and VSLAs are affiliated to the innovation platforms in Droum (75), Dogon Kiria (64), Aguié (131) Malbaza (107) and Torodi (50). Services offered through the innovation platforms include land restoration, water conservation, provision of agricultural services (training, rental equipment), and access to seeds and pesticides through agro-dealers. The innovation platforms sponsored 50 radio broadcasts on awareness-creating messages on the various activities of the programme.

6.3.7 Work Package 7: Planning, M&E and Scaling of Learning

By end of 2017, 70 scaling actors (local technical services, regional, national and international NGOs) were actively promoting uptake /adoption of the technologies advanced by the programme.

- **Activity Area 7.1: Programme Monitoring**

In the year 2017, the DryDev Niger team took several missions for monitoring the programme at various levels. These included:

- Monthly monitoring mission conducted by either the focal point or the technical service;
- Monitoring and operational support mission by DryDev's national coordination carried out every 2-3 months to all communes;
- Joint quality monitoring (JQM) missions conducted by ICRAF and CARE Niger coordination team, that were carried out twice in the year – in May and October. The October mission, which was conducted in Torodi, was instrumental in identifying the low rate of implementation in this commune, resulting in the decision to terminate implementation in Torodi effective from 2018.

Further, the DryDev Niger programme conducted its 2017 annual review and planning workshop from 16th to 19th of October. At this meeting, the country reviewed its performance in the year, and made proposals for the detailed implementation plan for 2018. In addition, a global workshop of all M&E staff from the five DryDev countries, convened and facilitated by ICRAF, was held in Ouagadougou, Burkina Faso, to review and take stock of the status of the implementation of the programme PMEL framework in each country, to evaluate progress on value chain work, formulate plans for developing beneficiary database, train on ODK with a view to initiating electronic data collection and online transmission, and to plan for the 2017 annual uptake surveys. A database of beneficiaries has been developed for the five communes targeted by the programme. According to this database, a total of 45,365 people (20,460 women) had benefitted from the programme in Niger by the close of 2017, against the target of 52,000 people (26,000 women). Finally, the 2017 annual uptake survey was conducted in November. The survey interviewed 520 farmers (260 women) across 101 villages from each of the five target communes. The results of this survey have been presented under the various work packages in this report.

- **Activity Area 7.2: Participatory M&E with FOs, Innovation Platforms, & local stakeholders**

Under this activity area, DryDev Niger team trained 291 community agents (15 women) in information collection and reporting. Each DryDev intervention village has an agent who tracks and reports to higher levels all data on the programme's achievements. Data collection focal points are established in each of the 33 village clusters working with DryDev and they centralize data from all member villages of their clusters. They are responsible for centralizing, checking and reporting information from their clusters to the communal facilitator through the ODK online data platform.

- **Activity Area 7.3: Scaling of evidence and learning**

On scaling up of promoted technologies, the Niger team produced promotional film on the activities of the programme in Niger. This film has been shown in many public fora, including all DryDev events. The programme also produced two brochures on improved practices promoted by the Niger team, to enable wider dissemination. Further, three joint control and learning missions were organized with the technical service departments in the communes of Aguié, Malbaza and Droum. A programme visibility mission was also organized in Droum, attended by national authorities such as the Secretary General of the Ministry of Agriculture and Livestock, the Cabinet Director of the Ministry of Cultural Renaissance, the Secretary General to the Governor of the Zinder region, regional technical services, representatives of NGOs and projects working in area (Mercy Corps, CADEV, USAID Sawki project, Regional Chamber of Agriculture, etc.). Finally, the Niger team conducted two planned comparison activities in 2017, that involved a total of 1,500 farmers (656 women), as described under Activity Area 1.3.

6.3.8 Work Package 8: Policy Analysis & Influencing

As of end of 2017, 11 key decision-makers (including governors, the prefects, mayors, technical services) were involved in targeted policies and institutional reforms in Niger, because of DryDev work.

- **Activity Area 8.1: Policy awareness raising**

Previous assessments revealed gaps in the understanding and application of rules and regulations in areas relating to land tenure, water, agro-forestry parks and rural finance. Three policy briefs were drafted by the programme to address these gaps. In addition, six communication aids (four posters and two video clips and audio messages) were developed with a view to popularizing the rules and regulations among beneficiary communities. The topic covered include land tenure, water access and management, agricultural financing and management of agro-forestry parklands. Further, ad hoc committees were set up in each commune to circulate and disseminate these rules and regulations through awareness caravans, use of community radios, and use of WhatsApp application to share the video clips. Further, training workshops were conducted in each commune to

strengthen the understanding and assimilation of the rules and regulations. The workshops were attended by 200 people (45 women), including administrative and customary authorities, technical services, local leader and farmers.

- **Activity Area 8.2: Policy influencing at local and national levels**

Under this activity area, 11 government institutions (including the Ministry of Cultural Renaissance, regional governorates, prefectures, mayors' offices, traditional chieftaincies, and the technical services for agriculture, environment, livestock, rural engineering, and water) were sensitized to commit to implementing the existing rules and regulations on the management of natural resources and access to credit.

6.4 MALI

The DryDev programme in Mali is implemented in ten sub-catchments covering 83 villages in the regions of Sikasso, Ségou and Mopti, as follows:

- Region of Sikasso: Menamba 1, Kiffosso 1, Koumbia in the District of Yorosso
- Region of Ségou: Cinzana (Fanbougou) in the district of Segou, Tominian (Kondala) Mandiakuy (Mouina) in the district of Tominian
- Region of Mopti: Soroly (Dologou), Bara-Sara (Mandoli) in the district of Bandiagara, Ségué (Kogo), Kani-Bonzon (Sadia-Dogon) in the district of Bankass

DryDev Mali is implemented by a consortium of four organizations, namely,

- Sahel Eco, as the national lead organization (NLO) and implementer for the region of Mopti,
- The Malian Association for Public Education and Protection of the Environment (AMEPPE) implementing partner for the region of Segou,
- The Malian Association for Awareness Raising and Sustainable Development (AMEDD) implementing partner for the region of Sikasso.
- OXFAM America is responsible for work package 4 (enhancing market access) and work package 5 (financial services linking) in all the intervention regions and sub catchments.

The consortium partners are supported by strategic government agencies like the Agency for the Environment and Sustainable Development (AEDD); the National Directorate of Water and Forests (DNEF); the National Directorate of Hydraulics & Energy (DNHE), the National Directorate of Agriculture (DNA); and the Institute of Rural Economy (IER). Mali targets to reach a total of 53,286 farmers (27,176 women) in the programme duration. The following sections present the report of activities carried out and achievements made during 2017.

6.4.1 Work Package 1: Sub Catchment Level Natural Resources Management

At the end of 2017, a total of 36,664 farmers (17,225 women) were involved in landscape management initiatives covering a total land area of 17,382 ha in the ten sub-catchments covered by DryDev Mali. This represent 68.8% achievement of the target set for the number of participating farmers and 149.8% of the target set for total land area covered by DryDev interventions.

- **Activity Area 1.1: Sub-catchment action plan developed**

The DryDev Mali team conducted a review of the status of implementation of water resources management plans in all ten target sub-catchments. This review, which involved key stakeholders and covered all implemented activities, highlighted the constraints to proper execution of activities and made suggestions for improvement. In general, low rate of implementation of activities was noted and attributed to the inability of the Integrated Water Resources Management (IWRM) committees to mobilize the resources needed for these activities. In 2017, the revised IWRM plans for Kiffosso, Koumbia, Ménamba and Kondala Mouina, Fanbougou, Soroly, Kogo, Mandoli, and Sadia were validated during meetings involving DryDev team and elected representatives of each commune.

- **Activity Area 1.2: Local capacity strengthening in sub-catchment management**

Training was conducted for 422 people (94 women), out of the 740 targeted, comprising producer members of IWRM, technical service agents, and members of the municipalities. They were trained on various themes as shown in Table 6.33. To address the issue of wood fuel and reduce pressure on the degraded environments, DryDev conducted a training of 35 local craftsmen, from the three sub-catchments of Yorosso (Kiffosso (13), Ménamba (12), and Koumbia (10)), on the construction and maintenance of improved metal stoves. The same craftsmen were also trained on the maintenance of water storage infrastructures with a view to providing the IWRM committees with knowledgeable people to provide routine maintenance of the water infrastructures.

Table 6.33: Trainees of various themes conducted in 2017 in relation to strengthening sub-catchment management teams

Themes covered in the training	Number trained in various Communes									
	Yorosso		Ségou		Bankass		Bandiagara		TOTAL	
	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women
Techniques and strategies to negotiate and mobilise financial resources			144	38	33	2	18	8	195	48
Principles of IWRM					74	10	-	-	74	10
Forest law (water management, and regulation of water and other forest resources	153	36							153	36
TOTAL	153	36	144	38	107	12	18	8	422	94
Farmers	146	36	140	38	64	12	18	8	368	94
Others	7	-	4	-	43	-	-	-	54	-

DryDev also provided training on techniques for making energy-saving stoves using clay to 997 farmers (763 women) from the sub-catchments of Soroly (40), Mandoli (20), Kogo (267) and Sadia Dogon (300), Fambougou (31), Kiffosso (100), Menamba (123) and Koumbia (116). Following these trainings and other awareness-raising activities conducted by DryDev a total of 1,382 energy-efficient stoves were fabricated across the ten sub-catchments were DryDev intervenes. This included: 1,121 in Mopti region (Soroly (150), Mandoli (188), Kogo (350), Sadia (510), Dologou (120), Mandoli (158), Kogo (320) and Sadia Dogon (480)), 43 improved stoves in Segou region (sub-catchment of Fambougou 43) and 218 improved stoves in the region of Sikasso (65 in the sub-catchment of Kiffosso, 35 in the sub-catchment of Ménamba and 118 in the sub-catchment of Koumbia).



Prototypes of improved energy-saving banco stoves

To satisfy the needs of the communities for conservation of the scarce forest and water resources, DryDev Mali assisted the communities in 19 villages to set up forest monitoring committees (16 in sub-catchments of Kiffosso, Menamba and Koumbia, two in the sub-catchment of Fambougou and one in the Mouina sub-catchment). The role of these committees is to protect the forests and sensitize their communities on the conservation and management of forest resources. The programme arranged for the training of 48 forest committee members on various relevant laws and regulations as well as their roles and responsibilities in conserving forest resources. A total of 14,964.21 ha of forest land is currently being monitored by these committees in the sub-catchments of Kogo (3,521 ha), Sadia Dogon (5,186.21 ha) in the region of Mopti and the sub-catchments of Kiffosso (1,950 ha), Koumbia (3,500 ha) and Ménamba (807 ha) in the region of Sikasso.

- **Activity Area 1.3: Development / maintenance of small water buffering**

In 2017, the Mali programme team rehabilitated 11 water storage infrastructures for various uses.

- Three ponds were rehabilitated in Bagadina and Barèna villages in Koumbia sub-catchment, and in Kiffosso 1 in Kiffosso sub-catchment, and the increased water is being used for livestock, agricultural and brick-making purposes.
- Rehabilitation of one hand operated water pump located in the compound of the school of the village of Pèrakuy in the sub-catchment of Mouina in the commune of Mandiakuy district of Tominian to facilitate safe access of clean water for the 326 students (168 girls).
- Rehabilitation of one gabion dam (55% completed as of December 2017) in the village of Vanekuy subcatchment of Mouina in the commune of Mandiakuy district of Tominian for the development of market gardening, rice cultivation, watering of animals and the planting of trees by 1,180 farmers (578 women).
- Five ponds were enlarged and deepened for fish production in the villages of Sonina and Kanian in the Kondala sub-catchment, Sabara village in Mouina sub-catchment, in the commune of Mandiakuy district of Tominian and in Wassadialan village in Fambougou sub-catchment in the commune of Cinzana district of Segou.
- A bridge dam of 191 meters long is being constructed in the village of Makoungo in Kiffosso 1 sub-catchment (30% completion as at December 2017) to benefit 18,162 people living in the villages of Makoungo, Kiffosso 1, Lopégué and Zangouosso. It is expected that the bridge dam will increase the potential for cultivable land (both upstream and downstream) by more than 570 ha.

In addition to the above, the construction of two new cyclopean concrete micro dams were commenced in 2017 at Kogo village in the Kogo sub-catchment, Commune of Bankass (one dam with the potential to irrigate 16 ha for rice production and fish production) and at Tintimboli village, Soroly sub-catchment, Commune of Bandiagara (one dam with the potential to irrigate 14 ha for rice production and fish production). These water structures are being constructed with strong input from the target communities for the collection of sand, stones, gravel and labour.

- **Activity Area 1.4: Sub catchment-level afforestation and FMNR**

The programme provided material support to a total of eleven private tree nursery operators (three in Kogo, Mandoli and Sadia Dogon sub-catchments, four in the sub-catchment of Fambougou, two in the sub-catchment of Mouina and two in the sub-catchment of Kondala) to strengthen their tree nursery operations by increasing the production and enhancing the accessibility of tree seedlings to the communities. The support given included provision of seeds of *Moringa oleifera* (16 kg), *Adansonia digitata* or Baobab (32 kg), *Carica papaya* or Papaya Solo (4 kg), standard plastics pots (310 packs of 100 pieces), wire mesh (32), wheelbarrows (11), shovels (18), hoes (18) rakes (18), picks (18), forks (18), and watering cans (18). In addition, a total of 95,283 plants were produced by 12 nurseries in the Kogo, Mandoli and Sadia Dogon sub-catchments (32,796 seedlings), Kiffosso 1, Ménamba 1 and Koumbia sub-catchments (46,154 seedlings), and in the three sub-catchments of

Ségou (16,333 seedlings). The programme also rehabilitated three wells in villages of Mandoli (sub-catchment of Mandoli) and Thy (sub-catchment of Kogo) to enhance the production of seedlings and growing of trees in the target communities.

The Mali DryDev team covered a total of 7615.39 ha of communal areas by land restoration activities. A total of 6,289 ha in the sub-catchment of Yorosso was enriched with 42,193 trees of baobab, caïllédrat, néré, shea, Monriga, Gum trees, Balanzan, and *Acacia nilotica*. These activities included 96.5 ha in the four sub-catchments of Mopti planted with 50,000 plants; 37.56 ha of communal land and forest areas in the sub-catchments of Fambougou, Kondala and Mouina in the region of Ségou reforested by 7,193 plants of Caillcedrat, Gum Arabic, Balanzan, *Acacia nilotica* by 284 (159) farmers; 43.33 ha of sand dunes in the Kogo sub-catchment (13.5), Sadia Dogon (14.8) and the ravine banks at Mandoli (15) planted with Euphorbia; and a total of 1,060 ha of communal plots were placed under FMNR in Kogo (1,000 ha) and Soroly (60 ha).



Tree seedling production in nurseries in the sub-catchments of Kogo and Kani-bonzon

Further, 50 village chiefs and councilors (3 women) from the villages of Dona, Ouendia and Cinzana Gare (sub-catchment of Fambougou district of Segou) participated in a consultation workshop to assess the relevance of planting trees along the National Road No. 6 (RN6) with a view to conserving the ecosystem and providing windbreaks. Agreement was reached to plant trees of native and exotic species. The Kogo inter-village forest management team undertook the restoration of 2,000 ha in Kogo, Mandoli and Soroly villages, in which 592 community participants (156 women) were mobilized. Finally, 90 ha of communal lands in the villages of Wassadiala, Ouendia and Bokuy, all in the region of Segou were enriched by the planting of trees (*Eucalyptus* spp, *A. nilotica*).

- **Activity Area 1.5: Development of forest and pastoral management plans**

A total of 147 km (equivalent to 797.5 ha) of livestock passage corridors was developed in pastoral areas in Mopti region (sub-catchments of Kogo (21 km), Mandoli (20 km) Soroly (20 km) and Sadia Dogon (39 km)); in Segou region (sub-catchments, Kondala (12 km) and Fambougou (15 km) and Cinzana (5 km)); and in Sikasso region (sub-catchments of Koumbia, Kiffosso and Ménamba). In addition, 150 ha of communal pasture lands were enriched with *Panicum* in the sub-catchments of Kiffosso 1 (80 ha), Ménamba 1 (50 ha) and Koumbia (20 ha). As part of the dissemination of forest and pastoral resource management interventions, 23 village awareness meetings were held in which 1,066 farmers (412 women) from the sub-catchments of Sadia Dogon (600 farmers), Kogo (316 farmers) and Mandoli (150 farmers), all in the region of Mopti, were introduced to land restoration practices and forest regulations. Other awareness creating activities included one radio broadcast (aired in three languages (Dogon, Peul, Bambara)) on the local convention and regulations in the sub-catchments of Kogo and Sadia Dogon; and a radio programme highlighting the use and enforcement of pastoral corridors was broadcasted on local radio (Shiignè et Kanouya) in Yorosso area in two local languages (Bamabara and Bomou). Further, to promote pastoralism, the programme constructed one dual-purpose livestock immunization facility in the villages of Kondala, Sagara, Kansene in the sub-catchment of Kondala commune of Tominian. Two pastoral wells and

drinking troughs were also constructed in the villages of Kanian and Kondala, to provide drinking water for animals from the different villages of the sub-catchment of Kondala and neighbouring villages. A third livestock watering facility is being finalized in the sub-catchment of Fambougou in the commune of Cinzana in Segou district.



Livestock vaccination park with boarding ramp (top) and watering facilities (bottom) in Kondala

6.4.2 Work Package 2: On-farm Water and Soil Management

Between 2015 and end of 2017, a total of 16,759 farmers (5,362 women) participated in various training and capacity building events on on-farm water harvesting and soil management practices. According to the annual technology uptake survey, 75% of the farmers in DryDev intervention sites have been exposed to land rehabilitation and soil fertility enhancement techniques, and 69% of those farmers are practicing the techniques promoted by DryDev. By the end of 2017, a total of 12,447 farmers (3,902 women) had adopted promoted on-farm water and soil management practices, covering a total farm land area of 5,036 ha.

• Activity Area 2.1: On-farm rain water harvesting promotion

In this activity area, the DryDev programme in Mali planned to train farmers and popularize the practice of zai, use of stone bunds, earth bunds and half moons to cover 529 ha of arable land. By the close of 2017, 86 ha of zai had been constructed in Mandoli (36 ha) and Soroly (50 ha) of Mopti region, in which 204 farmers (60 women) were involved – 104 in Mandoli and 100 in Soroly. In addition, a total of 11,548 m of stone bunds had been constructed and 236 ha of arable land conserved in Mandoli (55 ha), Soroly (55 ha), Sadia Dogon (53 ha) and Kogo (73 ha). Further, 12,309.8 m of earth bunds were constructed in Mandoli (1,600 m), Soroly (2,100 m), Sadia Dogon (6,630 m) and Kogo (1,979.8). The constructed earth bunds in the Mopti region, that mobilized a total of 734 farmers (95 women) in Mandoli (125), Soroly (3), Sadia Dogon (360) and Kogo (219), has enabled the restoration of land and conservation of the water on 178.3 ha of arable land. A total of 129.5 ha of earth bunds was revegetated / reinforced with *Acacia coleii* (through planned comparison activities) in Mandoli (42 ha), Soroly (15 ha), Sadia Dogon (34.5 ha) and Kogo (38 ha) in activities that mobilized 200 community members (26 women) across the three locations in Mopti region.

In Ségou region, 21 ha of arable land was covered by zai in Mouina (3.56 ha) and Kondala (17.49 ha); 50.78 ha by stone bunds in Mouina (42.77 ha) and Kondala (8.01 ha) in work that mobilized 962 farmers (219 women) in Mouina (287) and Kondala (675). In addition, a total of 130.1 ha of farmers fields were restored through single *Andropogon* spp vegetated bunds in the sub-catchments of

Mouina (8 ha), Kondala (64 ha) and (58.1 ha) in activities that mobilized 613 community members (17 women).

- **Activity Area 2.2: On-farm agroforestry promotion**

DryDev Mali conducted a series of training and awareness creation activities to popularize and enhance the practices of FMNR and agroforestry in target communities in Sikasso, Ségou and Mopti regions. Resulting from these efforts, a total of 5,682 ha of farmers' fields were covered by these practices by the end of 2017:

- In Sikasso: 2,030 ha of farmland were covered with agroforestry practices in the sub-catchments of Kiffosso 1 (940 ha), Ménamba 1 (660 ha) and Koumbia (430 ha); and 1,200 ha of farmland were planted with 11,154 trees (mango, orange, tamarind, shea) in 16 villages in the sub catchments of Koumbia (500 ha), Kiffosso 1 (420 ha) and Ménamba 1 (280 ha).
- In Ségou: 704.97 ha of farmland were planted with a total of 14,593 economic, or medicinal plants (baobab, mango, eucalyptus, erasers, anacardium, guava, zizyphus and neem) in Kondala (412.24 ha), Fambougou (109.4 ha) and Mouina (128.45 ha). In addition, 31.28 ha of farmland was covered with FMNR activities in the villages of Hanekuy, Kominalo, Sabara in the sub-catchment of Mouina.
- In Mopti: 1,336.04 ha of individual agricultural plots were restored through FMNR in the four sub-catchments of Mopti (Mandoli (55 ha), Soroly (36 ha), Sadia Dogon (590.65 ha) and Kogo (654.39 ha) in activities that mobilized 1,448 farmers (100 women) in Mandoli (145), Soroly (75), Sadia Dogon (610) and Kogo (618). Another 376 ha of farmlands were recovered and 43.33 ha of sand dunes stabilized in Mandoli (15 ha), Sadia Dogon (14.8 ha) and Kogo (13.5 ha) in activities that mobilized 490 farmers across the sites. Further, 35 ha of fallow farm fields were planted with *Brachiaria* spp in the Kiffosso 1 sub-catchment to promote and increase cattle feed production.



FMNR activities in the sub-catchments of Sadian Dogon (left) and SC of Kondala (middle and right)

The Mali programme team organized a competition to promote FMNR among farmers, in which 712 farmers participated and 16 farmers (Mandoli 3, Soroly 3, Sadia Dogon 5 and Kogo 5) in the districts of Bandiagara and Bankass, region of Mopti were awarded motivation prizes comprising small tools and farm equipment.

- **Activity Area 2.3: Soil conservation and fertility enhancement**

During 2017, the Mali programme team trained a total of 3,414 farmers (988 women) on the techniques making fast compost in both compost pits and open air, in Sikasso (690 farmers (135 women)), Ségou (1 709 farmers (535 women)) and in Mopti (1,015 (318 women)). A total of 69,891 tonnes of fast compost was produced and used to fertilize 1,616 ha of crop land in Sikasso (476 ha), Ségou (982,3 ha) and Mopti (156.7 ha). This activity involved 3,010 farmers (615 women), as summarized in Table 6.34. In addition, 25 ha of land in three villages in Mandoli sub-catchment was fertilized by itinerant animal grazing. Further, 395 farmers (20 women) were trained on biofertilizer production techniques (involving the use of cow dung, *Jatropha* cake, wood chips, blood, limestone and water) which was later applied on 150 ha of fields of millet, sorghum, cowpea and groundnuts in the Yorosso sub-catchment.

Table 6.34: Summary of compost produced, land fertilized and adopting farmers

Parameter	Yorosso			Ségou	Tominian		Bandiagara		Bankass		Total
	Kiffosso	Koumbia	Menamba	Fambougou	Kondala	Mouina	Dologou	Mandoli	Kogo	Sadia Dogon	
Compost produced (tons)	9,678	13,620	6,452	5,026	9,486	24,929	10	45	444	201	69,891
Area fertilized (ha)	156	201	119	201	317	464	2	7.1	107	41.5	1,616
Participating farmers	81	102	27	398	800	819	168	34	111	470	3,010
Women farmers	31	52	13	131	176	0	48	7	5	152	615

- **Activity Area 2.4 : Small irrigation promotion**

In activity area 2.4, the Mali team planned to rehabilitate 19 fenced market garden plots. By end of the year, five wells had been rehabilitated (through deepening) in the five villages of Sadia Dogon, Kani-Bonzon, Kani-Komolé, Endé Ogodengou and Endé Guinékinda (sub-catchment of Sadia-Dogon in the commune of Kani-Bonzon district of Bankass). In addition, three solar powered pumps were installed in market gardens in the Kanséné, Hanékuy and Tayo (Sub-catchment of Kondala commune of Tominian region of Segou) for the benefit of 97 farmers (95 women). Solar pumps, water tanks and associated pipping system were installed on two boreholes in the vegetable garden in the villages of Lopégué and Tébéré, respectively in the sub-catchments of Kiffosso and Koumbi in the district of Yorosso. This was aimed at enhancing the productivity and reduce drudgery for the benefit of 80 farmers (36 women) in the two market gardens that had been constructed by the programme in 2016. Further, five fenced market gardens, totalling 5 ha, have being constructed for the benefit of 116 women in the sub-catchment of Fambougou (village of Wassadiala 1 ha for 30 women, village of Macki-Wéré 1 ha for 32 women), the sub-catchment of Kondala (village of Sonina 1 ha, 30 farmers (18 women)) and the sub-catchment of Mouina (village of Sabara 1 ha, 24 women, village of Kominalo 1 ha, for 30 women). An additional three fenced gardens, each measuring 1.5 ha (total area 4.5ha) and watered by traditional wells, are under construction in the village of Siela (Sub-catchment of Menamba 1), village of Zangoussou (sub-catchment of Kiffosso 1) and the village of Dorosso 1 (sub-catchment of Koumbia). These three additional gardens are expected to benefit 192 farmers (139 women) in Yorosso.

6.4.3 Work Package 3: Agricultural Commodity Production

A total of 10,642 farmers (5,427 women) have been involved in various training and capacity building events on climate smart production techniques. By the close of 2017, the promoted techniques were being applied by 7,103 farmers (2,486 women) on a total farm lands area of 6,231 ha. The results of the 2017 uptake survey indicate that 95% of farmers in DryDev intervention sites were exposed to the use of climate information and 55% of them use climate information to plan their agriculture activities. About 74% of farmers use improved sorghum seeds, and 67% millet seed, 63% for fonio and 64% for sesame. The same survey shows that 55% of the farmers in DryDev interventions sub-catchments are exposed to clean energy technology (improved stoves) and 52% use the improved stoves after being trained by the DryDev programme.

- **Activity Area 3.1: Promotion of climate-smart agricultural production**

The activities conducted in 2017 to promote climate start agricultural production techniques in Mal are summarized in Table 6.35.

Table 6.35: Summary of activities conducted in 2017 to promote climate smart agricultural production

Production technique	Sub-catchment	Participation	
		Total	Women
Field demonstrations on appropriate cultivation techniques	Mandoli	30	10
	Sadia-Dogon	120	17
	Kogo	72	17
	Soroly	30	6
Field demonstration on early planting techniques	Mandoli	10	2
	Sadia-Dogon	96	18
	Soroly	50	9
Training on climate smart practices	Sadia-Dogon	302	231
Training on gardening	Mandoli	20	20
	Sadia-Dogon	105	68
Training on vegetable production	Mouina	25	25
	Mouina	30	30
	Kondala	30	22
	Fambougou	52	39
	Fambougou	40	27
Training on sheep and goat fattening	Kondala, Fambougou, Mouina	52	37
Training on early planting, bee-keeping and fish farming	Sadia dogon Menaba Kiffosso	395	12
Exchange visit to view and learn climate-smart practices such as drip irrigation, tree planting in agroforestry, FMNR, the use of improved and more resilient varieties, the erosion control techniques used	Sadia Dogon, Kogo, Mandoli, Dologou(Soroly)	40	5
Exchange visit to learn modern fish farm, banana production, beekeeping	Fiffosso 1, Menanmba 1 et Koumbia	80	32
Exchange visit to learn fish farming	Fiffosso 1, Menanmba 1 et Koumbia	80	32

Following the various capacity building events, the Mali programme achieved these results:

- A total of 356 farmers (20 women) were able to practice early sowing on a total of 1,026.70 ha of farm land. In addition, 49 farmers (2 women) installed 18 bee hives in Menamba 1 (13) and Lopegue (5) villages of Menamba 1 and Kiffosso 1 sub-catchments, in Sikasso region.
- In the villages of Sonina (sub-catchment of Kondala) and Sabara (sub-catchment of Mouina) the communities earned a total of 55,250 CFA¹³ (US\$96) from the sale of 66.5 kg of fish (Sonina 45 kg at 33,750 FCFA and Sabara 21.5 kg at 21,500 FCFA).
- Seventy-one farmers (all women) in the villages of Kanséné and Kanian (both in the sub-catchment of Kondala, district of Tominian) harvested 3,579.19 kg of vegetable from their perimeter gardens. The cash benefits from the sale of vegetables (above domestic consumption) was 397,050 FCFA (US\$ 691) to 36 participating women in Kanséné and 247,150 FCFA for 35 women in Kanian. Further, the rainy season maize grown in the Kanséné vegetable garden produced 1,726 kg of maize which fetched an additional 302,050 FCFA (US\$525) to the 36 women members.
- A total of 277 farmers (262 women) from Hanékuy and Tayo (Kondala sub-catchment, district of Tominian), Sanogola, Douna, Cinzana Gares (sub-catchment of Fambougou district of Segou) and Sabara and Kominalo (sub-catchment of Mouina, district of Tominian), were supported with seeds of shallot and chilli that are suitable for rainy season.

• Activity Area 3.2: Promotion of farmer-led extension systems

Planned comparison activities were carried out, with support of ICRAF, involving the planting of 16,030 grafted zizyphus plants in different size of planting holes. A total of 504 farmers (47 women) in the sub-catchments in Mopti region (5,000 plants planted by 499 farmers (33 women)), Yorosso (4,990 plants involving 597 farmers (90 women)) and Segou (6,040 plants). In situ grafting of balanites and zizyphus trees (521 trees) was also undertaken only in the region of Mopti. Further, 34

¹³ Exchange rate: 1 US\$ = 575 Franc CFA

members of the integrated water resources management committees from the sub-catchments of Mouina and Kondala were linked with the agro pastoral training centre of Zura in the district of Tominian who provide agriculture extension services on market gardening, sheep and cattle fattening and operations of agricultural machineries. The objective of this linkage is to facilitate access to agriculture advisory services.

- **Activity Area 3.3: Improving input supply system**

The Mali programme team organized meetings, attended by 27 delegates from nine unions of cooperative societies from the sub-catchments in Mopti, to review three plans for improving input supply systems. The plans were later revised in collaboration with value chain stakeholders (input and seed suppliers, micro finance institutions and decentralized technical services) with the objective of facilitating access to input. Following these linkage activities, a total of 254.5 tonnes (3,951 bags) of fertilizer was mobilized by 1,800 farmers (heads of farming unit) in the 26 villages of the four target sub-catchments in the region of Mopti. In addition, the programme facilitated linkage between 165 farmers (all men) from the three sub-catchments of Yorosso and the Yorosso's "Zamoho" agricultural service cooperative. This linkage will enable farmers to have access to 3.5 tonnes of seed. In the region of Mopti, the Mali DryDev team rehabilitated five agricultural input shops in the villages of Endé Ogodengou, Oualia and Kani-Kombolé (sub-catchment of Sadia Dogon), village of Mandoli in (sub-catchment of Mandoli) and the village of Thy (sub-catchment of Kogo). In Segou region, the programme constructed one new agricultural input shop in the village of Kanséné (sub-catchment of Kondala), and renovated two shops in the villages of Vanékuy (sub-catchment of Mouina) and in Cinzana (sub-catchment of Fambougou), for the benefit of 1,180 farmers (578 women) in Vanékuy and 2,000 farmers (961 women) in Cinzana.

6.4.4 Work Package 4: Enhancing Market Access

As at end of 2017, a total of 11,548 farmers (5,487 women), across all ten programme sub-catchments, were involved in one or more of the 16 value chains identified by the country programme. According to the results of the 2017 uptake survey, 84% of the farmers have been exposed to product marketing strategies. The uptake survey reported that 52% of farmers in the sub-catchments of Kondala (region of Sikasso), and Sadia Dogon and Kogo (both in the region of Mopti) were involved in the sheep fattening value chain.

- **Activity Area 4.1: Organizational development of producer groups**

The DryDev programme facilitated the development of networks involving six value chain groups, namely, small millet, sorghum, cattle fattening; food processing, sesame, silviculture and shallot. A total of 756 farmers (424 women) in the sub-catchments of Kondala, Mouina, Kiffosso, Ménamba, Koumbia Sègue and Kanibozon benefited from networking with suppliers and microfinance institutions (MFIs). This activity involved 21 cooperatives¹⁴ in 17 villages (Kansene, Kondala, Sadien, Sialo, Mougouni, Tiou-Tiou, Tionkuy, Kenekuy, Vanekuy, Bokuy, Kominalo, Kiffosso, Menamba 1, Menamba 2, Dionkouna, Dounde, Kanikombole) which were linked with suppliers such as Nyoumani SA, Toguna, and SEMIAS with funding provided by microfinance institutions RMCR, Soro Yiriwaso, Kafojiginew, CAMEC TOMINIAN, the BNDA agricultural bank and the NGO CARITAS. The programme mediated between value chain cooperatives and the relevant regulatory department to have the cost of registration of value chain groups reduced from 80,000 FCFA to between 20,000 FCFA and 35,000 FCFA, following which 42 value chain cooperatives (Fambougou 10, Bara Sara 2, Soroly 3, Kogo 1, Kiffosso 13, Koumbia 10, Ménamba 3) obtained their registration certificates in accordance

¹⁴ Twenty-nine unions of cooperatives were established in 2016, at the sub-catchments level, around the 16 value chains selected in the ten sub-catchments

with the uniform act of OHADA¹⁵. These certificates allow the cooperatives to operate in a legal framework, but also open them up to larger markets.

Fifty leaders of producer groups (12 women), from the sub-catchments of Kondala, Mouina and Fambougou (region of Ségou) were trained on the functions of unions and cooperatives. Two workshops were held to facilitate identification of non-cooperative stakeholders, and evaluate the strengths and weaknesses of the unions. Further, 68 leaders of cooperative societies from the sub-catchments of Kondala and Mouina were trained in the cooperatives law (OHADA). Participants understood the concepts, management, processes and laws relating to cooperative. In addition, 110 cooperative leaders (42 women) from the sub-catchments of Sadia Dogon (15) Kogo (15), Soroly (15) Mandoli (15) Mouina (20), Koumbia (10) Menamba (10) and Kiffosso (10) were trained on accounting and balance sheet approach to enhance their financial management and business negotiation skills. The programme also facilitated 13 members (9 women) from ten cooperatives from the sub-catchments of Kogo (2 cooperatives, 2 men), Sadia Dogon (2 cooperatives, 2 women), Mandoli (2 cooperatives, 4 women), Kondala (1 cooperative, 1 woman), Fambougou (2 cooperatives, 2 women) and Kiffosso (1 cooperative, 1 man) to participate in the agricultural fair of Kayes (FOKAYES). A total of 1,000 people (600 women) visited the stands where 12 products (sweet peanut, dèguè¹⁶, peanut pie, monikourou¹⁷, moukoulara¹⁸, cowpea, small millet, sorghum bread corn bread, peanut paw, balanites syrup and tamarind syrup) were exhibited.

- **Activity Area 4.2: Business and entrepreneurial skills developed for farmers**

The programme trained 10 participants (5 women) from six cooperatives of the sub-catchment of Kani-Bonzon in Mopti region on the techniques of processing balanites and tamarind. Training was also provided on groundnut and millet processing to 20 participants (all women) from three cooperatives from Bara Sara, in the sub-catchment of Mandoli (region of Ségou). Thirty women from the sub-catchments of Mouina, Kondala (district of Tominian), Koumbia, Kiffosso and Ménamba (district of Yorosso) were trained on processing agricultural products such as millet, maize and sorghum into products such as dèguè, monikourou and moukoulara.

- **Activity 4.3: Business plans developed for selected value chains**

The Mali team assisted 42 cooperatives of value chain groups to develop their value chain business plans, as summarized in Table 6.36. Twenty-one cooperatives, comprising of 756 members (424 women), were able to implement their business plans through loans obtained from MFIs amounting to 33,217,500 FCFA (US\$ 57,770).

Table 6.36: Membership and value chains of cooperatives of value chain groups

Region	Sub-catchment	Village	Name of Cooperative	Membership		Value chain
				Total	Women	
Segou	Mouina	Bomboro	Benkadi	25	21	Agro-food processing (millet, sorghum and maize)
		Tiou-Tiou	Parisin	25	15	Commercialisation of small millet
	Kondala	Kansènè	Doukafa	150	63	Agro-food processing (millet, sorghum and maize)
		Kanian	Parisin	24	15	Commercialisation of fonio
	Fambougou	Kolonkolona	Benkadi	30	14	Commercialization of sesame

¹⁵ OHADA - Organisation pour l'Harmonisation en Afrique du Droit des Affaires/ Organisation for the Harmonization of Business Law in Africa

¹⁶ Local name in Bambara of food product which consists of preparing the powder of cereals associated with aromas and which is intended for consumption

¹⁷ Small ball of millet flour used to prepare porridge

¹⁸ Crushed millet in small grain

		Sorobawere	Bankadi	30	03	Commercialisation of small millet
Mopti	Sadia Dogon,	Bagourou	Balais	60	23	Production and sale of small millet
	Kogo,	Doundé	Ambatiégué	56	24	Production and sale of small millet
	Mandoli,	Mandoli	Katiambou	25	00	Production and sale of small millet
	Soroly	Soroly	Fasoka Yiriwa	60	54	Fatttening
Sikasso	Koumbia	Dorosso	Katignona	31	00	Production and sale of sorghum
	Menamba	Ouyasso	Nietaga	82	82	Processing and commercialisation of shea butter
	Menamba	Menamba	Tiessiri	15	03	Commercialisation of chili
	Kiffosso 1	Siela	Benkadi	108	96	production and commercialisation of maize
		Makougo	Wilikadio	40	00	Soy production and processing

- **Activity Area 4.4: Strengthen multi-stakeholder value chain platforms**

Fifty members (20 women) form the sub-catchments of Sadia Dogon, Kogo, Soroly, Mandoli in the region of Mopti and Fambougou sub-catchments in Segou region were trained on business negotiations.

- **Activity Area 4.5: Establish and strengthen market information system**

A survey of 1,078 farmers (559 women) conducted in all the ten sub-catchments revealed that 51% of the respondents need information on commodity prices, 20% requested for specific products, 14% for the nearest place to sale their products and 15% were non-committal. Women made up 58% of those who needed information on commodity prices. On information channel, radio and television were preferred by 43% and 34%, respectively, of the respondents, with 65% of women respondents registering preference for the radio. The surveys also showed that 66% of the respondents already receive their agricultural information through the radio. All the 1,078 farmers surveyed indicated their use of the existing national market observatory system. The programme team has promoted the exchange of market information among value chains actors through the sharing of small text message by mobile phone. Up to 8,152 value chain stakeholders (4,755 women) have reported receiving their information on the price of different agriculture products via the mobile phone sms system.

6.4.5 Work Package 5: Financial Services Linking

A total of 321 Village Savings and Loan Associations (VSLAs) have been established or strengthened. Savings by these groups have enabled 3,233 farmers (1,975 women) to access loans amounting to 32,191,900 FCFA (US\$ 55,986) by the end of December 2017. In addition, 3,370 farmers (1,441 women) who are members of 78 cooperatives received loans from eight MFIs amounting to 79,939,300 FCFA (US\$ 139,025). These loans have been used to finance their business plans and warrantage systems involving their value chain products. The report of the 2017 uptake survey showed that 80% of farmers save through VSLAs, and that 17% of farmers in the DryDev intervention areas have accessed loans. The average amount of saving per person per year is 12,264 FCFA (US\$ 21) and the average loan obtained per person is 21,833 FCFA (US\$ 37).

- **Activity Area 5.1: Strengthen village savings and credit associations**

A workshop organized to analyze the strengths and weaknesses of the VSLAs revealed that these associations are good at mobilizing community financial resources and enhancing the credibility of the groups with the MFIs. Among the weaknesses identified was the low rate of saving by the members, and the fact that savings made by the groups are often distributed to members at the end of the year, rather than invested for higher returns. Members proposed to correct these weaknesses by introducing an investment fund, which would allow saving groups to retain some funds for investments.

Eight new saving groups, comprising 220 members (106 women), were identified and members trained. By the end of 2017, there were a total of 321 saving groups with a membership of 10,447 (4,613 women), who mobilized a sum of 58,013,420 FCFA (US\$ 100,893). This amount was against outstanding loans of 32,191,900 FCFA (US\$ 55,986) granted to 2,333 beneficiaries (1,975 women). The amounts of loans granted to women alone amounted to 19,793,150 FCFA (US\$ 34,423), which is 61% of the total outstanding. It is important to recognize that the total savings also includes an economic investment fund of 11,016,275 FCFA (US\$ 19,159) which is matched with weekly savings, and is used as collateral for accessing MFI credits. Some of the common uses of the loans include petty trading, raising small ruminants and covering expenses related to basic social needs, food, health and education. Table 6.37 presents a summary of the status of the membership and funds of the VSLAs in the Mali DryDev programme sites.

On the matter of training saving groups for income-generating activities, a total of 152 members (131 women) were trained on a module entitled "Manage income generating activities with profit". These members are now able to manage their income generating activities as they can identify new activities, follow the procedure for the management of collective income generating activities, estimate the expenses for their business, how to set the selling price, reduce operating costs and better manage stock to increase profit margins.

Table 6.37: Status of savings and loans in Mali programme sites as of end of 2017¹⁹

Sub catchment	# villages	# Coops	# VSLAs	Men	Women	Total	Savings group	# loans		Total Funds of SFC loans				Invest Funds	Total assets
								M	W	M	W	Total pret	Solde en caisse		
Fambougou	14	36	44	909	624	1 533	1 127 340	206	437	1 610 200	3 759 000	5 369 200	3 590 475	2 000 000	10 959 675
Kondala	11	36	42	1032	406	1 438	1 699 245	150	270	2 945 800	5 891 700	8 837 500	1 057 395	2 608 350	12 503 245
Mouina	15	35	45	1042	1023	2 065	1 434 590	510	908	2 653 000	5 306 000	7 959 000	1 065 275	479 3	9 503 575
Koumbia	7	44	51	1 077	573	165	1 984 850	22	9	999 85	985	1 984 850	2 199 500	1 453 750	5 638 100
Menamba	4	12	21	243	208	451	4 496 950	102	50	2 650 000	1 846 950	4 496 950	5 127 500	1 293 500	10 917 950
Kiffoso	5	19	23	347	263	610	611	99	50	509 9	500	1 009 900	611 1	1 042 800	2 663 800
Sadia Dogon	12	30	30	536	489	1 025	948 2	47	48	270	491 5	761 5	160 625	678 775	1 600 900
Kogo	8	21	27	332	395	727	1 113 600	52	100	260	339	599	323 125	607 6	1 529 725
Mandoli	3	21	22	197	346	543	1 203 850	50	60	385	475 5	860 5	61 625	693 5	1 615 625
Soroly	3	6	16	119	286	405	514 8	20	43	115	198 5	313 5	608 625	158 7	1 080 825
TOTAL	82	260	321	5 834	4 613	8 962	13 061 036	1 258	1 975	9 860 030	16 805 474	29 657 999	14 194 145	9 077 175	58 013 420

- Activity Area 5.2: Linkages with financial service providers**

Three workshops were convened in Ségou, Koutiala and Mopti, attended by 70 people (3 women), to evaluate the financing needs of value chain stakeholders and the challenges they face in accessing credit. The following recommendations were made at the end of these workshops:

- For MFIs: To increase the amount of loans made to agriculture value chains actors by the national bank for agricultural development (Banque Nationale de Développement Agricole (BNDA)), speed up the processing of loan applications to avoid unnecessary travel cost, train value chains actors in financial matters and sensitize them on the need to meet credit conditions, and create space for exchange between value chains actors and financial institutions on the conditions for granting loans and the opportunities available in the different services that the institutions offer.

¹⁹ Figures are in Franc CFA, US\$ 1=575 FCFA

- For the value chains actors: To create synergy of action between different funding institutions, set up a database of loan applications, accelerate the registration of cooperatives regrouping the promising value chains actors to facilitate their access to loans, and submit requests for subsidized seed in time.

Table 6.38 presents the status of MFI loans as of end of 2017. A total of 88,798,550 FCFA (US\$ 154,432) was accessed by 3 714 value chains actors (1,614 women) as loans from MFIs between 2016 and 2017. At the end of 2017, a total of 107,897,450 FCFA (US\$ 187,648) was mobilized, with the average share for women at 55.57%, and the total economic investment fund stood at 20,256,575 FCFA (US\$ 35,229).

Table 6.38: Status of MFI loans accessed by Value Chains Actors as of end of 2017

Sub-catchments	Amount received		Interest		Amount to pay back	
	Men	Women	Men	Women	Men	Women
Kondala	7 505 500	15 794 000	933 285	1 927 965	8 438 785	17 722 465
Mouina	4 912 000	7 843 750	449 790	645 810	5 501 440	8 644 600
Fambougou	6 200 000	2 425 000	806 250	235 750	5 262 250	2 660 750
Sub-total for Ségou	18 617 500	26 063 250	2 189 325	2 809 525	19 202 475	29 027 815
Sadia Dogon	1 611 000	1 186 000	193 320	118 680	1 804 320	1 107 680
Kogo	1 807 250	1 186 500	219 092	157 133	2 026 342	1 343 633
Mandoli	1 735 000	-	483 750	-	1 891 150	-
Soroly	150 000	220 000	15 750	23 000	165 750	243 100
Sub-total for Mopti	5 303 250	2 395 500	911 912	298 913	5 887 562	2 694 413
Koumbia	21 560 500	1 250 000	2 090 360	19 800	24 400 460	1 448 000
Menamba	1 775 000	2 010 000	141 000	282 700	1 988 000	2 291 960
Koumbia	964 300	-	115 716	-	1 078 616	-
Sub-total for Koutiala	24 299 800	3 260 000	2 347 076	302 500	27 467 076	3 739 960
Total	48 220 550	31 718 750	5 448 313	3 410 938	52 557 113	35 462 188
OVERALL TOTAL	79,939,300				88,019,301	

During 2017, the programme constructed six storage warehouses for cooperatives of value chain groups in five sub-catchments to support warantage activities:

- One store for cereal storage was built in Kanséné (sub-catchment of Kondala, district of Tominian) for the benefit of 39 cooperatives of value chain groups at a cost of 3,395,000 FCFA, with the community contributing 1,395,000 FCFA, or 41%.
- Two stores for cereal storage were built in Koumbia in the district of Yorosso for the benefit of three cooperatives comprising 97 members (all men). The total amount invested was 2,500,000 FCFA including community contribution of 500,000 FCFA or 11%.
- Two stores were built in Fambougou (sub-catchment of Fambougou, district of Ségou) for the benefit of two cooperatives comprising 80 members (55 women). Total amount invested was 3,395,000 FCFA with the community contributing 41% (1,395,000 FCFA).
- One store was built in Kondala (sub-catchment of Kondala, district of Tominian) for two cooperatives of value chain groups with 90 members (53 women) at a total cost of 3,395,000 FCFA, including community contribution of 1,395,000 FCFA (41%).
- One store for cereal storage was built in Mandoli (sub-catchment of Mandoli, district of Bandiagara) for nine cooperatives of value chain groups for the benefit of 212 members (29 women). Total amount invested was 3,440,000 FCFA including community contribution of 1,440,000 FCFA, or 42%.

6.4.6 Work Package 6: Local Governance & Institutional Strengthening

By end of 2017, activities relating to capacity building of organizations and institutions involved a total of 1,448 people (274 women) from farmer organizations, consultation frameworks, development stakeholders, elected and communal leaders and their staff, the IWRM committees.

The results of the 2017 uptake survey revealed that 39% of the respondents were satisfied with the quality of services provided by these structures.

- **Activity Area 6.1: Farmer organizations strengthening**

DryDev Mali conducted trainings to grassroots farmer organizations on themes relating to citizens control of public action, as well as on leadership and prevention of conflicts, as summarized in Table 6.39. The objective of the training was to enhance the capacity and management skills of the leaders of these organizations, as they defend the moral and material interests of their members.

Table 6.39: Trainings provided to grassroots farmer organizations

Theme	Sub-catchment	Men	Women	Total	Total per theme
Citizen's Monitoring of the public action	Menamba 1, Kiffosso1, Koumbia	46	10	56	86
	Sadia-Dogon, Mandoli, Kogo, Dologou	29	11	30	
Leadership and prevention and management of conflicts	Menamba 1, Kiffosso1, Koumbia	46	10	56	96
	Sadia-Dogon, Mandoli, Kogo, Dologou	30	10	40	

ICRAF conducted a training on institutional development to 43 participants, comprising 18 Mali programme technical staff, five members of the country team, ten IWRM committee members and ten mayors of different communes. In addition, the programme organized a study tour for the Mali programme team to view and learn the technology of the runoff water collection basins (BCER) for irrigation, as well as the *Sahelian bocage*. This event aimed at enhancing the programme team's knowledge on the water collection for supplementary irrigation and Sahelian groves.

- **Activity Area 6.2: Capacity development for local government institutions**

DryDev Mali supported the development of five Social, Economic and Cultural Development Plans (PDESCs) for the communes of Soroly and Bara Sara in the region of Mopti and the communes of Kiffosso 1, Menamba 1 and Koumbia in the district of Yorosso, region of Sikasso. The aim of this support was to integrate the IWRM plans developed with DryDev support into the PDESCs so that activities dealing with water resources management and climate change issues are implemented. This integration will offer the communes opportunity to mobilise funds from the national government investment agency for municipality, or *Agence nationale d'investissement des collectivités* (ANICT), and other development partners for the implementation of similar actions promoted by DryDev in other sub-catchments. In addition, 84 members (17 women) of the elected council of commune of Soroly (20), commune of Mandoli (19), commune of Segue (25) and commune of Bara Sara (20) were trained on aspects relating to the mobilization of financial resources for the implementation of PDESCs, formulation and management of the municipal budgets, conflict prevention and resolution, and management of communal natural resources. These elected and communal officials are now expected to have the necessary skills to carry out their various mandate and responsibilities. Further, communal officers and technical service staff in Yorosso district benefited from training on conflict prevention and management, agricultural land law and the regulations implementing the LOA²⁰ relating to the composition and operation of

²⁰ LoA: Loi d'Orientation Agricole (Orientation Law for Agriculture development)

COFOs²¹. The objective of this training was to enable elected municipal officials and their staff, other actors involved in the prevention and management of conflicts to know the content of certain provisions of the new law on agricultural land, as well as decrees relating to the application of the agricultural land law.

- **Activity Area 6.3: Strengthen multi-stakeholder platforms**

The DryDev programme contributed to the organization of seven sessions of COCSAD²² and one session of CLOCSAD²³ for the four target communes in the region of Mopti and the three communes in the district of Yorosso (region of Sikasso). A total of 528 members (105 women) of COCSAD and CLOCSAD participated to the meetings. These are platforms established by the decentralisation law of Mali to coordinate all development issues at the communal and district level. The objective of DryDev support was to inform the members of these platforms on the approach of DryDev programme and the progress made in the implementation of the programme results with the aim of inspiring the up-scaling of DryDev approach by other development actors.

During 2017, the programme provided support in the convening of meetings of farmer union of the district of Tominian (UACT), with a membership of 2,052 (652 women), for purposes of enhancing the up-scaling of DryDev approaches in the district.

6.4.7 Work Package 7: Planning, M&E and Scaling of Learning

By the end of 2017, a total of 76 scaling stakeholders, made up of village champion farmers, technical service agents, local authorities leaders as well as leaders of farmer organizations and local NGOs, are actively participating in the popularization of the technologies promoted by the programme in the ten target sub-catchments. A total of 1,535 farmers (596 women) and leaders of different farmer groups participated in DryDev activity planning and monitoring through quarterly planning and supervision workshops and field visits at sub-catchment level.

- **Activity 7.1: Programme monitoring**

Regular monitoring and supervision visits to programme sites continued as planned throughout 2017. The lead organization (NLO), Sahel Eco, carried out bi-monthly visits to programme activities implemented by the implementing partners (IPs). The country team (comprising the NLO and IPs, strategic partners from government technical services and ICRAF) convened four quarterly review and planning workshops. One joint quality monitoring (JQM) mission, led by ICRAF and Sahel Eco, was carried out in six sub-catchments in the regions of Segou and Sikasso. Although much progress had been made by the Mali team in many fronts and more communities were becoming interested in the programme, the mission found that the implementation of some of the scaling principles and core values, especially in the Fambougou sub-catchment were lagging. The JQM team found that integration of DryDev activities in the field was still poor, and pointed out the specific areas that needed addressing, with strong recommendation for urgent attention.

The DryDev Mali programme conducted its 2017 annual review and planning workshop from 9th to 11th of October. At this meeting, the country reviewed its performance in the year, and made proposals for the detailed implementation plan for 2018. In addition, a global workshop of all M&E staff from the five DryDev countries, convened and facilitated by ICRAF, was held in Ouagadougou, Burkina Faso, to review and take stock of the status of the implementation of the programme PMEL framework in each country, to evaluate progress on value chain work, formulate plans for developing beneficiary database, train on ODK with a view to initiating electronic data collection and online transmission, and to plan for the 2017 annual uptake surveys. As of end of 2017, a database

²¹ COFOs – Commission Foncière (Local land commission set up at commune and village level to sort out land tenure issues)

²² CCOSAD (Comité Communal d'Orientation, de Coordination des Actions de Développement/ Local Committee for the Coordination of Development Actions at commune level)

²³ CLOCSAD (Comité Local d'Orientation, de Coordination et de Suivi des Actions de Développement/ Local Committee for the Coordination of Development Actions at district level)

of beneficiaries has been developed for the 82 villages of the ten target sub-catchments of the programme. A total of 36,664 people (17,225 women) have benefitted from the programme in Mali, against the target of 56,235 people (28,680 women).



Joint quality mission visiting Yorosso and Koumbia sub-catchments

The 2017 annual uptake survey was conducted in November. The survey interviewed 480 farmers (249 women) across the 82 villages covered by the ten target sub-catchments.

- **Activity Area 7.2: Participatory M&E with farmer organizations and local stakeholders**

The Mali DryDev team was delighted to host, in January 2017, a 3-day field visit by the representative of the Dutch Ministry of Foreign Affairs (MoFA), as well as representatives from the Dutch Embassy in Mali. The delegation assessed the progress of activities in Ségou and Sikasso, followed by a feedback meeting with the NLO, the IPs, ICRAF staff as well as strategic partners. The feedback included discussions on the quality of the activities, the DryDev approach and its expected added value, scaling-up and integration of activities, synergy of the stakeholders in the field and sustainability, ICRAF support, monitoring and evaluation, documentation and lessons learned.



Visit of Mr. Jan Hijkoop of the Dutch MoFA to DryDev Mali in January 2017

DryDev Mali was also privileged to host the 2017 meeting of DryDev's Programme Advisory Committee (PAC). The session, which was convened by ICRAF and attended by representatives from the NLOs of Burkina Faso, Ethiopia, Kenya and Niger, provided the Mali programme team opportunity to show-case the activities being implemented in the sub-catchments of Ménamba 1 (village of Menamba 1) and Kiffosso (village of Lopegue) both in the region of Sikasso; and the sub-catchment of Kondala (villages of Sadia, kanséné, Minso and Kanian) region of Segou. This event enabled the Mali team to benefit from constructive comments and suggestions from both the PAC team and representatives from other DryDev countries. Internally, the country team organized one visit to programme intervention sites for ten local technical services agents, comprising the staff from departments of agriculture, forestry, water resources, and rural engineering. The team visited the sub-catchments of Koumbia, Kiffosso 1 and Ménamba 1, and was able view and assess the status of implementation of the 2017 action plan.

- **Activity Area 7.3: Scaling of evidence and learning**

The DryDev programme held a global review, reflection and planning meeting in Mekelle, Ethiopia. Convened and facilitated by ICRAF, the 5-day workshop brought together the representatives from all NLOs and IPs in the five DryDev countries, as well as ICRAF staff. The Mali team benefited from interactions with other countries, and exchange of results, ideas and suggestions. In addition, the Mali team conducted four planned comparison activities in 2017, namely, (a) in-field water harvesting using contour bund with earth to cope with changing climate in semi-arid smallholder farming areas in Mali; (b) evaluation of the survival rate and growth of planted fodder/fruit trees for degraded land restoration as a function of planting hole size; (c) comparison of survival, growth and production of in situ-grafted natural regenerated plants *Balanites aegyptiaca* and *Ziziphus mauritiana*; and (d) evaluation of the efficiency of various doses of different plant extracts on devastating insect pests and parasites of tomatoes in Mali. Finally, to enhance the visibility of the programme in Mali, the NLO produced 500 DryDev branded calendars and 500 caps for distribution to government agencies and other stakeholders.

6.4.8 Work Package 8: Policy Analysis & Influencing

DryDev Mali supported the advocacy actions conducted by the civil society network called “PR SéFA” during the passing of new agricultural land law in Mali. The objective was to help clarify the ambiguity between the modern law and the customary right on land tenure.

- **Activity Area 8.1: Policy Constraints and Challenges Identification**

The Mali programme team has been analysing three aspects of policy constraints dealing with (i) land tenure security, (ii) scaling up of agroforestry practices, and (iii) financing of the agricultural sector. These studies seek to contribute to the establishment of favorable policy and regulatory environments for agricultural landholders. More specifically, the studies seek to (a) review and synthesize the provisions of the legal and customary regulations and instruments governing agricultural land in Mali, and the role of the stakeholders in scaling up agroforestry practices and the financing of the agricultural sector; (b) identify and analyze the contradictions, gaps, distortions, weaknesses / inadequacies, hindrances and practical constraints of regulations, legal and customary instruments governing the agricultural land in Mali and the role of the actors, the scaling up of agroforestry practices and the financing of agricultural sector; and (c) develop political orientation notes with recommendations for legislative and regulatory reforms to be implemented to secure the agricultural land (possession, enjoyment, ownership, transfer, transaction, mediation, cadastre, etc.) for the benefit of family farms to scale up agroforestry practices and address shortcomings related to access to adequate financial services

- **Activity Area 8.2: Networking and alliance building**

DryDev supported the Advocacy Network for Land Tenure Security (RP-SéFA MALI) to organise a workshop to share and analyze the regulations formulated by the government for the creation of municipal and local land commissions (CoFo). The land commissions set up at commune and village levels (made up of village chiefs, customary chiefs, representative of youth and women associations, technical services and administrative and communal authorities) are responsible for: (i) reconciliation of parties to a dispute on agricultural land, prior to referral to the competent courts, (ii) contribution to the inventory of customs and practices in land matters, (iii) participation in the establishment of the cadastre at the level of the community concerned, (iv) participation in the development and implementation of the land management policy of the community concerned, (v) provision of opinion on all the land issues brought to the commission. The objective of the workshop supported by DryDev was to allow the participants to understand the decree, and facilitate their work with the communities. A total of 33 participants (7 women) representing farmer organisations (CNOP, AOPP), NGO, High Council of Municipalities, Association of Mayor, and the DryDev team attended the workshop.

- **Activity Area 8.3 : Lobbying and advocacy**

The development of three policy briefs (on land tenure security, scaling up of agroforestry practices, and financing of the agricultural sector) is ongoing (cf Activity Area 8.1).

6.5 BURKINA FASO

The DryDev Programme in Burkina Faso underwent a major restructuring process, during 2017. The previous institutional arrangements²⁴ were dismantled in July 2017, due to poor performance and programme mismanagement, and a new arrangement was established. In the new arrangement, ICRAF took over the country coordination role, while SNV and Tree Aid remained as implementing partners. SNV is now in charge of implementing all work packages in the sub-catchments of Kiembara, Kyon and Zogoré, while Tree Aid is coordinating the implementation of all work packages in the sub-catchments of Arbollé, Bassi and Kongoussi. The following Sections 6.5.1 to 6.5.8 present the activities carried out, and results obtained, in Burkina Faso during 2017 – before and after the above-mentioned restructuring process.

6.5.1 Work Package 1: Sub Catchment Level Natural Resources Management

By the end of 2017, activities carried out in WP1 had involved 5,557 community members (1,765 women) in various aspects of landscape management and rehabilitation. This represents a 12.34% achievement against the target of 45,000 people. A total of 2,649.25 ha of degraded lands had been put under restoration, representing 98.12% of the targeted 2700 hectares. Further, by end of 2017, DryDev Burkina Faso had reached a total of 3,185 farmers (407 women) under WP1, against a target of 5,400 farmers (2,700 women). Below are the descriptions and results of activities from WP1 in 2017.

- **Activity Areas 1.1: Sub-catchment action plans developed**

In 2017, the Burkina Faso programme team carried out participatory assessments of sub-catchment management plans. SWOT analysis was conducted to draw the lessons and determine activities to be carried out by actors at the level of each sub-catchment. A framework for consultation, development and implementation of sub-catchment management plans is now operational in each sub-catchment.

- **Activity Area 1.2: Local capacity strengthening in sub-catchment management**

DryDev Burkina Faso provided technical support to the management committees of all six sub-catchments of Kiembara, Kyon, Zogoré, Arbollé, Bassi and Kongoussi. Each sub-catchment held constitutive workshops to develop bylaws and regulations to facilitate their official recognition. Three associations were created, namely:

- Baas-néré association for the development of the Zogoré sub-catchment;
- Kolaga association for the development of the Kiembara sub-catchment;
- Yi penet association for the development of the Kiembara sub-catchment.

These sub-catchment management committees are now linked with the Ministry of Water and Sanitation; the SP / PAGIRE and other water agencies, who will ensure their technical supervision. Three sub-catchment management committees (Kyon, Kiembara and Zogoré) were sensitized on their roles and responsibilities, and trained on planning, advocacy, resource mobilization, monitoring and evaluation for the implementation of action plans. Further, seven water infrastructure

²⁴ Which had Réseau MARP as the national lead organization as well as responsibility for the delivery of work packages 2 and 3; Tree Aid responsible for WP1 and WP8 and SNV leading on the delivery of WP4, WP5 and WP6 – across six target sub-catchments of Kiembara, Kyon and Zogoré, Arbollé, Bassi and Kongoussi.

management committees, comprising 75 members (15 women), were trained on organizational management as well as on the maintenance of water retention infrastructures. These committees were then linked with the Nakanbé Water Agency. The training provided led to improvements in the maintenance and management of the water infrastructure.

- **Activity Area 1.3: Development/maintenance of water buffering**

A total of 49 ha of land from three sub-catchments were treated as summarized in Table 6.40. A total of 483 farmers (20 women) were involved in rehabilitation of three artificial ponds. These ponds will enable increased crop and livestock production in Kongoussi sub-catchment, especially in the villages of Bognam-Foulbé, Yelkoto and Zano. Construction of similar structures is ongoing in the villages of Sakou Mossi, and more water storage facilities are planned in 2018. It is estimated that these facilities will provide water for 7,340 cattle and 18,700 small ruminants, in addition to supporting domestic needs.

Table 6.40: Structural works done in the three sub-catchments of Zogore, Bassi and Kougoussi

Sub-catchment	Villages	Types of works carried out	Numbers, surface area (ha) or length developed (m)
Kyon	Goundo	Gabions	200m
		gravity structure	1 structure
		Dissipation basin	1 basin
		Dykes with vegetated soil with <i>Andropogon gayanus</i>	150m
		Stone dykes	15m
Bassi	Saye	Stone dykes	300m
		Dykes in geotextile bag (dykes protected with rubble)	250m
		Earth dyke	60m
		Subsoiling (ha)	18ha
	Sorogho	Threshold dykes	80m
		Dykes in geotextile bags	40m
		Subsoiling	19ha
Zogoré	Vire-Songdin	Threshold dykes protected with rubble (3)	30m
		Dykes with geotextile bags (1)	50m
		Subsoiling (ha)	12ha

- **Activity Area 1.4: Sub-catchment level restoration / reforestation by FMNR and tree planting**

A total of 141 farmers (42 women) in Arbollé sub-catchment were trained on techniques of making zai pits, FMNR and tree root-pruning in Dakiegré forest. Seventy-five shea trees were root-pruned and additional 5,000 trees were planted.

- **Activity Area 1.5: Development of forestry and pastoral area management plans**

A total of 660 ha of pastoral land was reforested in Sakou Mossi and Bendogo villages, in the sub-catchments of Kongoussi and Arbollé, respectively. Other activities were as follows:

- Sakou Mossi village in the Kongoussi sub-catchment: Construction of a water bufferings and planting of 1,000 trees of *Eucalyptus camaldulensis*, *Acacia nilotica*, *Lawsonia inermis*, *Manguijera indica*, *Moringa olifera* and *Adansonia digitate*
- Bendogo village in Arbollé sub-catchment: clearance of the grazing area with a significant contribution of local technical services, the town-hall, the village development councils and the management committee of the sub-catchment. A total of 165 farmers took part in the activity.
- Bendogo village in Arbollé sub-catchment: Delineation of 4.30 km pastoral corridors.

- Training of 225 people (59 women) on zai pits, negative effects of bush fires, FMNR and root-pruning.

6.5.2 Work Package 2: On-farm Water and Soil Management

By the end of 2017, DryDev Burkina Faso had reached a total of 3,185 farmers (407 women), through various means, with information on improved water and soil management technologies. A total of 1,522 farmers (407 women), out of the targeted 2,700 farmers, were practicing promoted water and soil management techniques, giving an achievement of 56%. Further, a total of 2,649.25ha of cultivated farm lands (from the targeted 2,700 ha) had been put under promoted soil and water management options. Below are the activities carried out, and results obtained in 2017.

• Activity Area 2.1: On-farm rain water harvesting promotion

Various soil management practices were implemented on a total of 1,447.25 ha of agricultural land to benefit 2,134 farmers. Technologies implemented included zai pits (1,298 ha), stone bunds (138 ha) and half-moons (11.25 ha). Using these techniques, sorghum and millet yields on farmers' fields increased from an average of 850 kg/ha (sorghum) and 750 kg/ha (millet) to an average of 1,625 kg/ha and 950 kg/ha, respectively. Field demonstrations were conducted to compare different types of water harvesting techniques. Field visits conducted in collaboration with the local technical services agents enabled 354 farmers (35 women) to evaluate the efficiency of earth bunds in reducing the effect of erosion as well as stone bunds. Further, rainwater harvesting basins were constructed on 11 farm fields in Kiembra and Zogoré sub-catchments.



Construction of rainwater harvesting basin in progress in Zogoré in the field of a community trainer

• Activity Area 2.2: Promotion of on-farm agroforestry

A total of 2,172 farmers (724 women) were trained on methods for regeneration of degraded lands, agroforestry practices and FMNR. A total of 584 ha of agricultural land were covered with land recovery and enrichment practices. A total of 2,172 farmers (724 women) were also supplied with various fruit trees and plants for hedgerows, as shown in Table 6.41.

Table 6.41: Plant species supplied to farmers in Arbollé and Zogoré

Species	Number of plants		
	Arbollé	Zogoré	TOTAL
<i>Acacia nilotica</i>	3,800	35,000	38,800
<i>Lawsonia inermis</i>	1,800	0	1,800
<i>Mangifera indica</i>	1,520	810	2,330
<i>Moringa oleifera</i>	876	570	1,446

<i>Adansonia digitata</i>	0	800	800
Total	7,996	37,180	45,176

Participatory action learning activity was conducted to compare the effects of different tree planning practices (two hole-size options (60 cm x 30 cm and 60 cm x 60 cm) and two fertilization options (fertilized with manure and unfertilized)) on the survival of local fruit trees (*Tamarindus indica* and *Ziziphus mauritiana*) and tree leaf vegetable production (*Moringa oleifera* and *Adansonia digitata*). A total of 399 farmers (111 women) were trained on planting options and demonstrations were conducted. This activity demonstrated good collaboration between ICRAF, the Burkina Faso DryDev team, the Institute of Environmental and Agricultural Research (INERA) and the Institute of Rural Development (IDR).



Observation of watering



Measure of the size of the holes



Neck diameter measurement



Measuring the width of the crown



Height measurement



View of a baobab plant

- Activity Area 2.3: Improved on-farm soil conservation and fertility management**

DryDev Burkina Faso conducted training for 38 community trainers (4 women), comprising agricultural technical service agents and technical management committees of the six programme sub-catchments. Trainees were exposed to techniques for heap composting technique as well as mulching, making of stone bunds along the contour lines, constructing contour benches with weirs

made from geotextile bags, half-moons, and mechanized zai. Following this training, a further 38 replication training sessions were held by the community trainers, reaching a total of 1,501 farmers (157 women) out of 1,512 targeted for the year. Further, the Burkina Faso team advanced the practicing of microdose technique to 1,051 farmers (84 women).

- **Activity Area 2.4: Promoting small-scale irrigation**

An evaluation of old sites developed for rice production at Goundo (Kyon sub-catchment) showed that serious mistakes had been made in laying out the contour lines in the rice production site which did not allow for retention of adequate water during the rainy season. New rice-growing areas were identified by stakeholders for rice production in Gouéré (Kiembara). The programme facilitated meetings with the community, attended by 52 people (15 women), to discuss land transfer for communal rice production. More than 10 ha of rice has been developed for the benefit of 160 farmers (48 women) in Dakiegré, Arbolé sub-catchment. To strengthen vegetable market gardens, a total of 785 farmers (535 women) from the sub-catchments of Kiembara, Kyon and Zogoré were trained on market gardening (Table 6.42), and 11 wells constructed in Kongoussi (3 wells), Zogoré (3 wells), Kyon (2 wells) and Kiembara (3 wells). Vegetable seeds and farm materials such as wheelbarrows and watering cans were donated to 322 farmers who are expected to benefit from the enhanced perimeter vegetable gardens. In addition, two perimeter vegetable garden wells were rehabilitated in Gouéré village (Kiembara sub-catchment) to benefit 132 farmers (117 women).

Table 6.42: Number of farmers trained on market gardening

Sub-catchments	Number of Farmers		
	Men	Women	Total
Kiembara	47	204	251
Kyon	60	24	84
Zogoré	143	307	450
TOTAL	250	535	785

6.5.3 Work Package 3: Agricultural Commodity Production

By the end of 2017, DryDev Burkina Faso had reached a total of 2,784 farmers (1,023 women), through various means, with promoted agricultural commodity productions technologies. A total of 2,258 farmers (918 women), out of the targeted 45,000 producers, were practicing climate-smart techniques on agricultural commodity productions.

- **Activity Area 3.1: Promoting climate-smart farming options**

The DryDev programme in Burkina Faso established 24 demonstration fields of cowpea and six fields of groundnut fields on farmers owned by volunteer producers in Kongoussi and Bassi sub-catchments. However, the restructuring of the country programme, which occurred in the middle of the agricultural season (July to September 2017), resulted in a suspension of many field activities in this activity area.

- **Activity Area 3.2: Promotion of farmer-led extension systems**

During 2017, the programme team in Burkina Faso conducted two trainings to enhance farmer-led extension systems. These were, (a) training of 38 community farmers in the sub-catchments of Kiembara, Kyon and Zogoré, and (b) training 91 innovative farmers in the sub-catchments of Arbolé, Bassi and Kongoussi. These 129 innovative farmers then committed to leading and disseminating improved technologies on their farms, as well as conducting field demonstrations on communal lands. Technologies demonstrated included the use of stone bunds, half-moons, zai pits, FMNR, contour grass strips, vegetation hedges, reforestation and gully treatments.

Further, five pilot innovation sites, each made up of a highly degraded 4 ha piece of land, were identified in the sub-catchments of Zogoré and Bassi sub-catchments to serve as learning sites where several water conservation and management technologies (zai pits, half moon, stone bunds) and agroforestry practices could be implemented and demonstrated together. The integration of these practices is expected to demonstrate their collective effects on soil recovery and restoration. A total of 65 farmers (16 women) are involved in learning and sharing their experiences at the site.

- **Activity Area 3.3 Improving input supply systems**

Three volunteer village vaccinator networks, comprising a total of 19 volunteer vaccinators, were established in the sub-sub-catchments of Kiembra, Kyon and Zogoré. Over the year, 8,000 poultry birds were vaccinated against Newcastle disease and 1,500 were de-wormed. To facilitate farmers' access to quality inputs and institute a permanent supply plan, the programme team held three fairs in the sub-catchments of Kyon, Kongoussi and Bassi. These fairs provided the forum for exchanges between input suppliers, farmers and the strategic partners such as the technical services and other NGOs. The fairs brought together 48 exhibitors (seed companies and suppliers of fertilizers and pesticides) and 640 producers.

6.5.4 Work Package 4: Enhancing Market Access

By the end of 2017, DryDev Burkina Faso had reached 548 farmer groups, comprising 3,663 farmers (2,524 women) in WP4 activities. Further, 129 value chain business plans had been developed and 121 farmers (32 women) had been trained and linked up to market information systems (MISs)

- **Activity Area 4.1: Building the capacity of the country in market system and value chain analysis**

This activity was not conducted during 2017.

- **Activity 4.2: Organizational development of farmer groups**

During 2017, 277 value chains groups (or cooperatives) were established and structured to provide more effective economic services to their members. A total of 51 sector meetings were organized (15 for poultry, 12 for cowpea, 3 for sesame, 3 for peanut, 6 for shea, 9 for rice and 3 for onion) that involved 548 cooperatives and 1,591 producers (899 women). From these meetings, 51 agreements for sector management in value chains were signed between the cooperatives, and a total of 277 cooperatives are now able to manage themselves, mobilize resources and deliver economic services to their members (e.g. collective purchase of inputs, collective marketing, organize promotion days, and provide packaging service or product processing). Further, a total of 3,663 farmers (2,524 women) are currently involved in shea, cowpea, local poultry, groundnut value chains, as well as in the production of sesame and rice, as side products. Table 6.43 gives the number of cooperatives established and supported in the six target sub-catchments.

Table 6.43: Number of cooperatives (value chain groups) organized around value chains

Sub-catchment	Value chain	Number of Cooperatives (value chain groups)	Members directly impacted		
			Male	Female	Total
Arbollé	cowpeas; chicken	25	51	175	226
Zogoré	chicken, onion	52	108	73	181
Bassi	cowpeas; chicken	43	26	269	295
Kiembra	shea, chicken	33	269	232	501
Kyon	shea, peanut	10	23	458	481
Kongoussi	cowpeas; chicken	114	931	1,549	2,480
Total	-	277	1,407	2,756	3,663

Further, 91 value chain groups were trained and empowered to advocate for, and implement their action plans. The value chain groups were enabled to:

- Identify priority actions of the member groups of the innovation platforms; for purposes of (a) financing group activities through negotiation with microfinance institutions for favourable credit rates and more flexible terms, and (b) provision of equipment for small-scale processing activities.
- Identify and appoint group leaders to lead the advocacy activities and the monitoring the implementation of the selected action plans.
- Train 40 members of each group to conduct advocacy for the benefit of their members.
- Monitor planned activities and collect information on activities taken to improve the financing of groups and access to small processing equipment.

• **Activity Area 4.3: Farmers’ business and entrepreneurship capacity building**

An assessment was conducted on 400 rural micro-enterprises and 276 cooperatives, and gaps in their capacities in relation to business management (inventory management, financial and accounting management, marketing, production route) were identified. Based on this assessment, several contextualized trainings (on entrepreneurship, marketing and commercial negotiation, and business plan development) were provided to 400 rural micro-enterprises and 269 agricultural cooperatives in value chains shown in Table 6.44.

Table 6.44: Number of private rural micro-enterprises and cooperatives assessed for capacity gaps and value chains involved in capacity enhancement

Sub-catchment	Number of assessed rural micros enterprises	Number assessed cooperatives	Value chains involved in the entrepreneurship and marketing training
Arbollé	55	45	Sesame, Local poultry, cowpea
Bassi	30	55	Local poultry, cowpea
Zogoré	61	22	Local poultry, cowpea, onion, rice
Kiembara	54	38	Shea, local poultry, rice
Kongoussi	200	109	Local poultry, cowpea
Kyon	-	-	Shea, peanut
TOTAL	400	269	

These activities enabled the actors to acquire knowledge in the three areas, entrepreneurship, management and marketing. The monitoring of these training courses will be conducted in 2018 to collect data on the level of implementation and achieved changes.

In addition, a total of 1,676 farmers (1,170 women) from 218 cooperatives were trained in marketing and commercial negotiation. Following the trainings, producers are now able to better market their agricultural produce and conduct trade negotiations. Local poultry producers in the village of Dakiegre in the sub-catchment of Arbollé have expanded their customer base by gaining access to new markets such as the Sada gold mine market in Niou and Ouagadougou. Monthly sales of chickens from the village has increased from 650 to an average of 1000. Further, to improve product processing and link productions to the market, 789 value chain actors (635 women) from the sub-catchment of Kyon were trained on the processing of products linked to selected value chains, as summarized in Table 6.45. The trainings were used to demonstrate production techniques of different types of processed products such as donuts, couscous and cowpea lumps. About 3 tonnes of shea butter was produced and marketed at the Kado Shea Processing Unit (Kyon Sub-catchment).

Table 6.45: Actors trained in processing technology in the Kyon sub-catchment

Value chain	Number of actors trained			Processed products
	Male	Female	Total	
Shea	23	458	481	Shea nuts, shea butter
Cowpea	45	150	195	Donut, couscous, cowpea lumps
Local poultry	86	27	113	Grilled chicken following good hygiene practices
Total	154	635	789	



Sorting nuts



Grinding nuts



Production of Shea butter



Processed Shea butter

Production of shea butter at the KADO center, sub-catchment of Kyon

• **Activity Area 4.4: Developing business plans for selected value chains**

Representatives from various value chain cooperatives were trained on business plan development. Those trained were able, in turn, to share the knowledge gained with other members of their organizations. Each cooperative was also assisted in developing their business plans, as summarized in Table 6.46.

Table 6.461 : Value chain business plans developed in different target sub-catchments

Sub-catchment	Status of developed business plans			Number of beneficiaries		
	Individual farmers	Cooperatives	Total	Male	Female	Total
Arbollé	10	38	48	113	479	592
Zogoré	38	22	60	100	360	460
Bassi	15	35	50	194	838	1032
Kiembara	7	43	50	325	538	863
Kyon	0	2	2	33	488	521
Kongoussi	79	79	158	735	1224	1959
Total	149	219	368	1,500	3,927	5,427

Five business-to-business (B2B) meetings were organized with microfinance institutions (MFIs) to discuss the business plans. Out of the 127 business plans presented to the MFIs, 41 received favourable reviews and pledges for funding. By the close of 2017, some of these business plans were being funded by MFIs.

- **Activity Area 4.5: Multi-stakeholder value chain platforms**

Activities carried out in this activity area, during 2017, yielded the following results:

- Eleven value chain innovation platforms were established, and a cowpea platform in Kounboussi was identified for strengthening.
- Eleven value chain platform management committees were established.
- Twelve meetings, involving 180 participants (101 women) of value chain platforms (onion, cowpea, local poultry and shea butter) were held to identify key services needed by the members of the platform and to implement priority activities and services.
- Six general assemblies of innovation platforms, involving 95 people (36 women) were held in the sub-catchments of Kiembara, Kyon and Zogoré. These assemblies were used to discuss action plans and develop road-maps for improving the functioning of each value chain.

Two institutions of technology and innovation diffusion, IRSAT²⁵ and SONATER²⁶, were invited to make an exhibition of agricultural and food processing equipment, comprising plows, carts, seeders, motor pumps, tillers, driers, hullers and tractors. Discussions were held on the characteristics, mode of operation, costs, acquisition and settlement procedures (cash or credit, own funds or grants, etc) for acquiring the equipment. A sales contract was concluded in the shea value chain between Kado Shea Butter Production Center (Kyon Sub-catchment) and 12 shea nut collector groups of 1,700 women, for the supply of 7 tonnes of shea nuts. In addition, draft contract was negotiated between sorghum farmers of Kiembara and local beer producers (dolo) for the supply of 28 tonnes of red sorghum.

- **Activity Area 4.6: Establishing and strengthening the market information systems (MISs)**

The programme organized meetings with value chain platforms with a view to identifying key information sought by the producers in the different value chains, as well as establishing the list of markets that trade on various value chain commodities in each sub-catchment. The meetings also formulated mechanisms for collecting market information, and clarified the role of platform management technical committees in collecting information from the private operators of the ECODATA market information system. Farmers were sensitized in the use of AGRIDATA platform. AGRIDATA enables stakeholders to receive information on climate and input prices through an SMS system, and also gives farmers access to extension services through a call center. A test of the information system was carried out during the participatory assessment workshops involving 121 farmers (32 women). Training on the use of the information system is targeted for 2018 with intent to reach 5,000 users.

6.5.5 Work Package 5: Financial Services Linking

By the end of 2017, the Burkina Faso team had reached 165 village saving and loans associations (VSLAs), comprising 2,155 farmers (1,413 women), with various interventions under WP5. Thirty VSLAs were linked to financial service providers, and 425 members (229 women) had benefited from credits estimated at US\$ 8,727 through the warrantage system.

- **Activity Area 5.1: Strengthening village saving groups**

Following the interruption of the programme during the restructuring process, the original plan to create new VSLAs was abandoned in favour of strengthening existing groups through capacity

²⁵ Institute of Research in Applied Sciences and Technology

²⁶ National Society of Land and Rural Equipment Planning

building and provision of more options for savings and prudent utilization of financial resources. Meetings were held with VSLAs to identify training needs on topics related to (a) income-generating activities (production, processing, marketing); (b) entrepreneurship and project proposal writing techniques; and (c) accounting. Following the various capacity building activities, the VSLAs were able, in 2017, to mobilize an equivalent of US\$ 96,944 as savings and credit. Thirty VSLA representatives (28 women) were enabled to identify their priorities in four points, namely, training on VSLA, monitoring and advisory support, advocacy to enhance credit conditions for banks and microfinance institutions, and facilitation for signing protocol with MFIs.

- **Activity Area 5.2: Links with financial service providers**

DryDev Burkina Faso facilitated six meetings between MFIs and 213 VSLA members (191 women) across the target sub-catchments. In the meetings, MFIs presented to the VSLAs various financial products and services, conditions and procedures for accessing credit as well as benefits that VSLA members can enjoy from their memoranda of understanding with MFIs. A total of 124 VSLAs expressed interest in collaborating with MFIs such as the credit union, UBTEC, FAARF, ASIENA and MUFEDB to access credit.

The programme formulated and implemented two warrantage systems in the sub-catchments of Kiembara and Zogoré. The MFI UBTEC provided credits equivalent to US\$ 8,727 to 425 people (229 women) in the villages of Goué and Zogoré (Table 6.47). DryDev also helped to rehabilitate and equip three warrantage stores in the sub-catchment of Zogoré, Kyon and Kiembara.

Table 6.47: Warrantage figures as at end of December 2017

Sub-catchment	Quantity (tonnes)	Commodities	People registered for warrantage		
			Men	Women	Total
Kiembara	5	cowpea, peanut, sorghum, sorrel, and rice	8	34	42
kyon	12	sorghum, cowpea, peanut	67	126	193
Zogoré	8	cowpea, peanut and rice	121	69	190
TOTAL	25		196	229	425



Above: Warrantage stores rehabilitated by DRYDEV in Kiembara and Zogoré Below: Warrantage cowpea (in yellow containers) and cereals (in sacks) in the warrantage store in Zogoré in December 2017

6.5.6 Work Package 6: Local Governance & Institutional Strengthening

By the end of 2017, DryDev Burkina Faso had trained 71 farmers organizations with a total membership of 1,149 farmers (933 women). These trainings also included 60 beneficiaries (8 women) from three local technical services responsible for crops, livestock who are expected to assist the FOs in each sub catchment. Sub-catchment management committees of Zogoré, Kyon, Kiembara have also been registered.

- **Activity Area 6.1: Strengthening farmer organizations (FOs)**

In 2017, the DryDev Burkina Faso team trained 71 farmer organizations on cooperative management and group dynamics. A total of 1,149 farmers (933 women) participated in these trainings.

- **Activity Area 6.2: Local government institution capacity building**

DryDev conducted four training sessions for technical service agents operating in all six target sub-catchments. The training covered principles of governance in farmer organizations and the new OHADA²⁷ regulation on cooperatives. A total of 60 beneficiaries (8 women) from three local technical services responsible for crops, livestock and environment benefited from these trainings. Other trainings given to the technical service agents (by DryDev team in collaboration with INERA) included composting, shea grafting techniques, nursery production and provision of advisory to tree nursery growers. Following these trainings, the quality of technical service provided to producers in the Kiembara, Kyon and Zogoré sub-catchments has greatly improved, as well as integration of the sub-catchment management approach. Three out of the targeted four institutions have been strengthened in the three sub-catchments, covering a total of 44 local actors (Table 6.48).

Table 6.48: Number of technical services participants in capacity building events

Capacity Building Themes	Number of events	Number of participants		
		Technical Services	Communes	Total
Training on composting technique	3	7	-	7
Training on simplified sub-catchment management approach	3	10	22	32
Training on production of plants and advisory of nursery farmers	1	3	-	3
Training on in situ grafting techniques of Shea	1	2	-	2
Total	8	22	22	44

- **Activity Area 6.3: Multi-purpose multi-stakeholder platforms**

Six consultative meetings, two each in the sub-catchments of Kiembara, Kyon and Zogoré, were organized to facilitate the establishment of an alliance on the use of the shea processing unit for the benefit of 20 shea nut collection groups. This was a new approach, different from the previous situation where the shea processing unit was used by a single collection group. This approach enabled: (a) the production of 2.54 tonnes of shea butter in 2017 with a turnover of US\$ 4,156, (b) the development of a project to create a peanut processing unit for members of the Kyon peanut platform, and (c) the establishment of collective purchase and provision of group services.

6.5.7 Work Package 7: Planning, M&E and Scaling of Learning

By the end of 2017, DryDev Burkina Faso had reached a total of 22,500 farmers (17,789 women), across all work packages and the six target sub catchments, against the target of 45,000 farmers (22,500 women). An uptake survey conducted in December 2017 showed that, of the soil and water management techniques promoted, zai pits, stone bunds and minimum tillage were the highest

²⁷ OHADA - Organisation pour l'harmonisation des Droits des Affaires en Afrique

adopted practices, with adoption rates measuring 76%, 44%, and 26%, respectively; while the adoption of FMNR (8%) and tree planting (9%) ranked low.

- **Activity Area 7.1: Program monitoring**

A joint (ICRAF-Burkina Faso NLO) quality monitoring (JQM) of ongoing activities was conducted in April 2017. The JQM, that involved intensive field visits to programme activities in the sub-catchments of Kyon, Bassi, Zogore and Kiembara, revealed glaring weaknesses in the structure of the programme, and the way activities were being implemented in the country. The observations made by ICRAF at this JQM event provided a strong basis for restructuring of the programme in the country, which was later carried out between July and September 2017. Following the restructuring, the Burkina Faso DryDev team conducted community assessment workshops in all sub-catchments with a view to raising awareness of the proposed changes and clarify the roles of each stakeholder in the new programme setup. The meetings also sought to make qualitative analysis of the activities carried out by beneficiaries, and draw lessons for designing future activities. Further, the programme conducted M&E training for programme field staff that strengthened their capacity in the conduct of annual technology adoption surveys. The results of the December 2017 uptake survey, in the category of *in-situ* soil and water conservation techniques summarized in Table 6.49, show that the zai pits, stone bunds and minimum tillage are the highest adopted practices, with adoption rates measuring 76%, 44%, and 26%, respectively; while the adoption of FMNR (8%) and tree planting (9%) ranked low. The survey showed that no adoption of contour bunds and bocage had been recorded.

Table 6.49: Adoption rates of soil and water conservation technologies

In situ soil and water conservation technologies	Adoption rates (%)						
	Kongoussi	Kiembara	Zogore	Arbolle	Kyon	Bassi	Country Average
Zai pits	95	87	58	60	37	85	76
FMNR	20	4	0	0	3	3	8
Tree planting and/or management	24	1	4	0	1	2	9
Minimum tillage	31	0	49	0	13	33	26
Soil/earth bunds	6	51	11	10	0	0	10
Half moon	2	25	11	45	0	0	12
Stone bunds/belts	55	76	38	21	28	40	44
Contour bunds	0	0	0	0	0	0	0
Bocage	0	0	0	0	0	0	0

In terms of uptake of soil fertility management practices, manure application (58% uptake) and composting (54% uptake) were the highest-ranking options taken up by the surveyed farmers across the six target sub-catchments (Table 6.50).

Table 6.50: Uptake of Soil fertility management practices

Soil fertility management practices	Adoption rates (%)						
	Kongoussi	Kiembara	Zogore	Arbolle	Kyon	Bassi	Country Average
Manure application	83	83	41	29	20	60	58
Composting	50	73	60	52	19	70	54
Microdosing	0	0	2	0	4	3	1
Crop rotation	30	25	28	6	4	22	22

Further, the uptake survey revealed high levels of adoption of climate-smart adaptation practices (100%), while practices related to sustainability and mitigation measures were shown to need improvement (see Table 6.51).

Table 6.51: Adoption rates of climate-smart dimensions

Climate-smart dimensions	Adoption rates (%)						
	Kongoussi	Kiembara	Zogore	Arbolle	Kyon	Bassi	Country average
Sustainable productivity	62	48	61	7	18	21	36
Mitigation practices	79	3	89	18	20	48	43
Adaptation practices	100	100	100	100	100	100	100

- **Activity Area 7.2: Participatory monitoring and evaluation with farmers' organizations and local stakeholders**

In October 2017, the Burkina Faso programme team organized a series of participatory assessments of ongoing activities in all six target sub-catchments, which also doubled up as consultative sessions for soliciting ideas for the DIP2018 planning process in the 6 sub-catchments at the community level of DryDev activities. In addition, field visits organized in collaboration with local technical services provided opportunities for 354 beneficiaries (35 women) to assess the effectiveness of two types of water conservation methods – plain field versus use of stone bunds. Farmers observed firsthand the beneficial effects of stone bunds as a means of *in-situ* conservation of rain water.

- **Activity Area 7.3: Scaling of evidence and learning**

Planned comparison (participatory action learning) activities carried out by the programme team, ICRAF, the Institute of Environment and Agricultural Research (INERA) and the Institute of Rural Development (IDR) enabled farmers to learn better survival methods for local tree species for fruit and leaf vegetable production. Two fruit trees (*Tamarindus indica* and *Ziziphus mauritiana*) and two vegetable species (*Moringa oleifera* and *Adansonia digitata*) were planted on farmers' plots using two sizes of planting holes (60 cm x 30 cm and 60 cm x 60 cm) and two fertilizer options (fertilized with manure and unfertilized). A total of 399 producers (111 women) participated in this learning event. Further, a total of 1,000 copies of the first country programme newsletter was distributed in various outlets throughout the country. Finally, the Burkina Faso programme team was able, with assistance from ICRAF, to develop a database of producers and suppliers in the six target sub-catchments.

6.5.8 Work Package 8: Policy Analysis & Influencing

By the end of 2017, DryDev Burkina Faso had prepared three policy briefs relating to forest governance, forest economy, and land tenure security improved sub catchment resources management.

- **Activity Area 8.1: Review of policy constraints and challenges**

By the end of 2017, DryDev Burkina Faso had prepared three policy briefs relating to forest governance, forest economy, and land tenure security improved sub-catchment resources management.

- **Activity Area 8.1: Review of policy constraints and challenges**

DryDev Burkina conducted a study in 2017, in collaboration with the Forest Governance Action Group (GAGF), to review the legal and institutional constraints relating to agro-silvo-pastoral activities – both at the sub-catchment and at the national levels. The study focused on examining the current policy documents and regulations, analysis of the legal documents and regulations, identification of stakeholder capacity gaps, and formulation of strategies for improving programme performance. The results of this study were shared with stakeholders in workshops held on 23 and 24 November 2017. Three draft policy briefs, first formulated in 2016, were edited and adopted. The policy briefs touched on (a) Forest governance, (b) Promotion of forest economy, and (c) Land tenure security. These three policy briefs were found relevant and welcomed by participants of a

validation workshop convened by the programme. The workshop recommended that the policy briefs be brought to the attention of national decision-makers, as their impact would not only enhance the development of agro-sylvo-pastoral activities, but also enable the affirmation and empowerment of local authorities.

- **Activity Area 8.2: Capacity building at local level**

In November 2017, five manuals were drafted and approved by the devolved technical services (environment, agriculture, water and sanitation, livestock) to facilitate their field operations and implement advocacy strategies. In December 2017, DryDev facilitated the establishment of an advocacy group at the sub-catchment levels, consisting of locally elected persons (mayors and prefects), civil society organization and farmers organizations.

- **Activity Area 8.3: Lobbying and advocacy**

DryDev supported the advocacy groups in formulating their annual work and communication plans.