6 Humidtropics innovation platform case study

WeRATE operations in West Kenya

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Origins of WeRATE

WeRATE is built upon a common understanding that isolated farmer groups and local NGOs cannot satisfy the expectations of their clients unless they work together to exchange ideas and opportunities. This realization was slow to emerge as local organizations were often territorial and secretive, believing it was in their best interest to seek and work with sponsors independently. It was the emergence of umbrella organizations, such as WeRATE that demonstrated the advantages of collective action to these smaller local groups. For example, WeRATE members interviewed in February 2015 declared: 'WeRATE has helped in facilitation, training and dissemination of how to use technologies and value addition'; 'Value addition such as processing has empowered women to earn money, WeRATE has also opened up markets in Nairobi and villages' (Appendix 6.2).

Innovation

WeRATE has collaborated in the development of several innovations, both among its members and in collaboration with the private sector. WeRATE demonstrated the efficacy of IR maize as an effective tool to combat striga and incorporate this technology into an integrated control system. Following these guidelines, WeRATE farmers were the first in Africa to eliminate striga from their fields and farms. WeRATE demonstrated the advantages of marketing BIOFIX legume inoculants in packets smaller than 100 g so that this product better reflected the demands of small-scale farmers. Now inoculants are also available in 10, 20 and 50 g packets. WeRATE pioneered soybean enterprise throughout West Kenya, first introducing more productive varieties, assembling BNF technologies, introducing them to agro-dealers and then overcoming the emergence of Asian rust disease through the introduction of tolerant varieties. WeRATE worked with MEA Ltd to formulate a new, widely popular fertilizer-blend (Sympal), specially blended for symbiotic grain legumes. WeRATE led in the development of recipes using soybean so that the nutritional advantages

of this new crop would not bypass the households otherwise adopting soybean grown for market. WeRATE is sensitizing farming communities to the threat of invading Maize Lethal Necrosis Virus and working with farmers to develop non-host alternatives and promote tolerant maize varieties. To identify a single major innovative accomplishment by WeRATE is superficial as the true strength of the IP is its ability to work with both researchers and farmers in a practical, iterative problem-solving mode.

From umbrella organization to IP

WeRATE operated as an informal network in West Kenya for many years before it was formalized as a registered NGO. First it operated through consensus among NGOs active in Kenya's Western Province dating from the mid-1990s through 2002 with modifications to the initial approach as more NGOs joined the network (Woomer *et al.*, 2002; Woomer, 2007). Moi University began research on small-scale farming systems and joined this informal alliance (Okalebo *et al.*, 2006). At this point, about 240 on-farm technology trials were being conducted per year. FORMAT was formed in 2002 by MSc graduates from these projects and the term WeRATE was first coined as the outreach arm of that NGO (Savala *et al.*, 2003). Its approach in collaboration with AATF and later Alliance for a Green Revolution in Africa (AGRA) was then applied to other farm technologies, particularly the management of striga (AATF, 2006). In 2008, WeRATE reached about 52,000

Figure 6.1 Participants at the WeRATE Planning Workshop for the 2015 long rains and Second Agricultural Technology Clearinghouse

Photo: WeRATE

households for pre-release testing of imazapyr-resistant (IR) maize for control of striga (Woomer *et al.*, 2008), a 'miracle' technology later commercialized by three Kenya seed companies. In 2010, the N2Africa Project identified WeRATE as the lead outreach partner in the Western Kenya Action Site (WKAS), and a system for geographic 'Nodes' coordinating 26 cooperators was developed; node leaders were responsible for administration and logistics as several new, large farmer associations had emerged. It forged close working relations with several companies that manufacture and distribute farm inputs, particularly MEA Fertilizers Ltd, SeedCo Kenya and the Kenya Agro-dealer Association. A photo of WeRATE members appears in Figure 6.1.

Formalization and operations

In 2012, the Humidtropics programme sought collaboration with Research for Development (R4D) Platforms for intervention and possible resource transfers in its WKAS (Figure 6.2). WeRATE's bid for this position was successful. At the same time, Phase 2 of the N2Africa Project entered into 'indirect' technology outreach, meaning that field actions could no longer be coordinated directly by IITA.

In addition, several new initiatives were seeking outreach partnership in areas of soil fertility management, bean disease control and improved cassava-based cropping. Formalization of WeRATE as an umbrella NGO was initiated at the final N2Africa Kenya Country Workshop in February 2013 and the NGO was officially recognized, starting 23 May 2014. WeRATE's main objective is to advance rural transformation in West Kenya. It was formed in part to become eligible to receive funds directly from donors and become equal partners in larger scale research and development activities. After a lengthy approval process by the NGO Board of Kenya, WeRATE now has its own bank accounts (both US$ and KES) and a KRA Pin Number. As a result, it will no longer manage funds through member accounts. This should lead to better financial reporting to supporters. Its officers include: Chairman, Vice Chairman, Secretary, Treasurer, M&E Specialist, Extension Specialist, Data Manager, Accountant and four Technical Advisors. Only registered organizations with an email contact and paid membership dues of KSh3,000 (about $35) were eligible for participation; 22 groups, mostly farmer associations and local NGOs, met these criteria (two more joined later). These groups, their areas of operation, farmer representation and activities are further described in Appendix 6.1. A map of the WKAS and location of WeRATE members within it appears in Appendix 6.3.

Farming systems

Farming systems within WKAS were characterized through a comprehensive survey of 291 households conducted by the N2Africa Project in 2013. Overall farming system and household characteristics were integrated into a farming

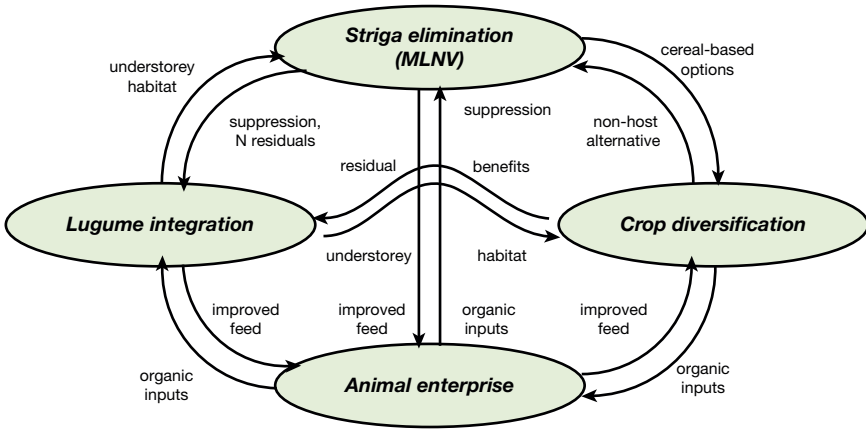


Figure 6.2 Key entry points for intervention and their possible resource transfers in small scale farming systems adopted by WeRATE and the Humidtropics programme in the West Kenya Action Site

Source: WeRATE research

system diagram that depicts crop and animal enterprises, resource transfers, household food supply and income (Figure 6.2). Average farm size is rather small (0.87 ha), farm activities with maize and bean intercropping predominate, less importance is placed upon root and cash crops, farm management practices indicate that crop residues are frequently being transferred between fields, fed to livestock and used in composting. Least common practices include top-dressing with mineral N, mulching or transfer of fresh manure and urine, all managements with proven efficacy (Sanginga and Woomer, 2009). This approach suggests that income from sales of cereals, legumes and animals constitutes 76 per cent of the household income per year. However, some elements of this model are based upon outside information (e.g. commodity prices) and assumptions (crop residues = 1 – Harvest Index) and some resource flows are absent for lack of information. The findings and analyses of these farming systems provide a strong baseline and perspective upon which to base future innovative and R4D actions.

WeRATE also conducted a survey among its member groups in late 2014 to determine their activities, capacities and needs. A 24-query questionnaire was developed and administered to 25 stakeholder groups. Results showed that altogether these stakeholder groups represent 79,506 farmers, 66 per cent of whom are women, there is strong interest among these groups to better understand and access new farm technologies, youth and women interests are strongly represented. During 2014, 86 field trials and 36 farmer field days were conducted by WeRATE members. Farmer grass-roots training is also a priority among these groups with 6,265 members (58 per cent women) trained in various technologies; WeRATE popularized itself and promising technologies through media events in 2014. A majority of members operate their own input

shops but also work closely with other agro-dealers, produce seed and conduct collective marketing, with 75 tons and 182 tons produced and distributed respectively, directly engaging 7,645 members (70 per cent women). Value added processing is also ongoing, among most groups with 13 different products being produced from nearly 43 tons of grain by 622 group members, mostly women. The groups also identified their most severe production constraints for maize, soybeans and beans, and recognized widespread plant nutrient deficiencies of nitrogen and phosphorus.

The N2Africa Project strongly influences the groups as well, promoting BNF technologies and encouraging groups to establish farm input shops, collective marketing centres and value-addition of grain legumes. Awareness of bean disorders and soil constraints was advanced through the recently established NIFA-Better Beans field campaign. The level that the special interests of both women and youth are represented at among these groups is impressive, and suggests that new project activities advancing their interests will receive ready collaboration through WeRATE. All WeRATE members requested support for additional farmer training, particularly in new farm technologies, 62 per cent in marketing and 48 per cent in agri-business (Woomer *et al.*, 2014).

New approach: the Agricultural Technology Clearinghouse

It is only fair that, when projects engage WeRATE for multi-site technology testing and popularization of new farm technologies, they also consider the stated needs of the NGO and its members. As a result, in response to growing

Figure 6.3 Participants at the WeRATE Planning Workshop and Second Agricultural Technology Clearinghouse for the 2015 long rains assembling test kits

Photo: WeRATE

interest in WeRATE coordination of technology testing and field campaigns, the seasonal Agricultural Technology Clearinghouse was organized. The Clearinghouse brings proven new farm technologies to its members by first introducing a suite of R4D projects and their field protocols and then soliciting member participation. This approach leads to specific agreements between WeRATE, its projects and members, and the logistics needed to deploy these field tests.

The first Clearinghouse was conducted in over three days in preparation for the 2014–2015 short rains growing season and attended by platform stakeholders. The Second Agricultural Technology Clearinghouse for the 2015 long rains took place in late February (Figures 6.1 and 6.3). During this workshop, WeRATE members were introduced to four different technology tests and provided opportunity to explore their usefulness during the short rains. These technologies (and projects) included BNF technologies (N2Africa), striga elimination (Humidtropics Action Research), better bean production (NIFA-Black Carbon) and cassava management (IFAD-Cassava). A short description of each technology test follows.

N2Africa BNF Best Practice

This test examines N2Africa Best Practice of mineral fertilization with Sympal and inoculation with BIOFIX, purchased from MEA Fertilizers Ltd, on soybean cv Squire, the best performing variety from last season's variety test provided by the Kenya Soybean Farmer Association. In all, 25 input packages were assembled and distributed to participants. Data report forms were submitted by 22 subscribers, an 88 per cent response. Results from this trial (Table 6.1) indicate that the recommended N2Africa package increases soybean yield by +860 kg/ha in part due to better plant stand and symbiotic performance. Subscribers to this trial demonstrated their ability to assess legume root nodules by several criteria. The next planned action is to evaluate the rate of Sympal application in different soils and agro-ecological zones of West Kenya.

Table 6.1 Soybean cv Squire yield, stand and nodulation characteristics in response to management on 22 farms in West Kenya during the 2014–2015 short rains growing season (± SEM)

Management	*Grain yield (t/ha)*	*Plant stand (%)*	*Root nodules/ plant*	*crown nodulation (%)*	*Red interior (%)*
No inputs	1.36 ± 0.22	80 ± 9	8 ± 2	3 ± 2	58 ± 13
Sympal[a]	1.65 ± 0.33	81 ± 8	11 ± 2	15 ± 8	65 ± 11
BIOFIX[b]	1.73 ± 0.23	83 ± 9	18 ± 2	47 ± 13	79 ± 10
Both inputs	2.22 ± 0.40	86 ± 9	27 ± 3	70 ± 11	85 ± 9

[a] Sympal Fertilizer blend (0–23–16+) at 125 kg/ha.
[b] BIOFIX legume inoculant (strain USDA 110) applied at 10g/kg of seed.

Source: WeRATE research

NIFA-Better Beans

This test involves beans and the benefits from better management, including the use of biochar as a soil amendment. There are ten managements in this test, the most complex evaluation WeRATE has undertaken. In all, 20 Better Beans technology packages were distributed to the leaders of farmer associations in West Kenya. Assembly of these packages was complex. NIFA provided about 500 kg of biochar packed in 7 kg bags, but they were very leaky, therefore WeRATE provided tightly woven polythene bags for repackaging. CIAT provided 80 kg of New Rose Coco (bush) seed of excellent quality. Options for climbing bean cv Tamu were available as well, with only four leaders selecting the latter. Inoculant packets (10 g) and fertilizers (1 kg) were specially packed by, and purchased from the MEA factory in Nakuru. Data reports were received from all 20 subscribers, but some responses were incomplete.

Preliminary results from these on-farm tests (Table 6.2) suggests that the recommended N2Africa technology package performs well (+314 kg/ha), is further enhanced through the addition of biochar (+134 kg/ha), due in part through modest disease suppression, and is greatest when mineral nitrogen is also applied (+136 kg/ha). The economic response to biochar is uncertain, however, as no commercial stocks are available so it remains difficult to price this experimental input. Subscribers not only demonstrated an ability to assess yield and nodulation, but also ranked severity of pests and disease (Figure 6.4).

Figure 6.4 WeRATE members identify preferred soybean management system – rust tolerant cv Squire variety – during farm liaison training

Photo: WeRATE

Table 6.2 Summarized results from the Better Bean trials on 20 farms show strong response to inputs and reduced root rot

Management	*Bean yield (kg/ha)*	*Nodules/plant*	*Root rot (0–3 ranking)*
No inputs	829±219	7±3	1.19±0.16
N2Africa package[a]	1143±304	19±4	0.88±0.25
Package with biochar[b]	1277±236	20±4	0.61±0.25
With biochar and CAN[c]	1413±254	16±4	0.73±0.24

[a] N2Africa package = Sympal fertilizer (276 kg/ha) and BIOFIX inoculant (USDA 2667).
[b] biochar applied at 2 t/ha.
[c] CAN (63 kg N/ha) replaces BIOFIX in N2Africa package.

Source: WeRATE research

Despite the sound performance of WeRATE subscribers, NIFA scientists elected to discontinue our collaboration after only one season. Instead they entered into direct agreement with individual WeRATE members they met through a field tour organized by the Platform. However, WeRATE members are developing their own technology tests under Better Beans II activity in 2015 long rains.

Humidtropics maize technologies

This test is designed to diagnose the severity of striga infestation and Maize Lethal Necrosis Virus (MLNV), and to evaluate the resistance of six newly released varieties from three commercial seed companies (Freshco, SeedCo and Western Seed Co.). A known susceptible maize variety (WH 403) serves as a control management and a sorghum-soybean intercrop offers an alternative to maize in the worst affected areas. This test includes the new imazapyr-resistant (IR) maize variety FRS 425-C. In all, 25 test packages were provided to WeRATE members for testing in striga and MLNV-infested areas.

All six managements receive a basal application of DAP and later CAN topdressing, inputs pre-packaged by MEA Ltd. The sorghum variety is a dwarf white type with a large market demand and its soybean intercrop is inoculated cv Squire. Data report forms on these on-farm tests were returned by 16 subscribers (88 per cent response); findings appear in Table 6.3.

IR maize performed well in striga-infested areas (Figure 6.5) and WH 402 expresses impressive tolerance to MLNV. The two highly productive hybrids (WH 507 and SC Simba) have reduced capacity to withstand these constraints, suggesting that farmers in infested areas are better advised to choose their maize varieties on the basis of specific tolerance rather than general yield potential. The sorghum–soybean intercrop tolerates striga and avoids MLNV but offers reduced yields, in part through reduced plant stands; results are currently undergoing economic analysis. Subscribers demonstrated their abilities to collect data directly related to two severe biotic constraints of maize but it is

Table 6.3 Performance of maize varieties and non-host intercrop in striga and/or MLNV-infested fields of West Kenya during the 2014–2015 short rains based upon 16 on-farm technology tests (±SEM)

Management	*Strategy*	*Crop stand (plant/seed)*	*Crop yield (t/ha)*	*Striga stems per plant*	*MLNV tolerance (0–1 rank)*
WH 403	Susceptible variety	0.89±0.12	1.95±0.36	5.4±1.8	0.5
FRC 425 IR[a]	Striga elimination by IR	0.93±0.14	3.02±0.39	3.1±1.6	0.4
WH 402	MLNV management	0.91±0.14	3.03±0.40	6.0±1.8	0.6
WH 507	Outgrow biotic stress	0.91±0.15	2.14±0.31	5.8±1.4	0.4
SC Simba	Outgrow biotic stress	0.85±0.14	2.45±0.36	5.6±2.0	0.5
Sila/Squire[b]	Non-host intercropping	0.75±0.23	1.08±0.28	2.1±0.4	0

[a] IR = Imazapyr resistant maize.
[b] Alternate rows of sorghum cv Sila and soybean cv Squire. All others are commercial maize varieties available in Kenya.

Source: WeRATE research

important that future field sites be more carefully selected for the presence and degree of field infestation. Training will be offered to Master Farmers in this regard. In the 2015 long rains, tests will be designed to diagnose the severity of striga infestation and MLNV, and to evaluate the resistance of six newly released varieties from the three commercial seed companies.

IFAD-Cassava

This test examines the effects of improving cassava variety, mineral fertilization, spacing and intercropping within eight different managements. In all, 18 cassava technology test kits and three cassava bulking packages were assembled and assigned to WeRATE members. About 3,500 good quality cuttings from a common (cv Merry Kalore), improved, released (cv Migera) and four KARI experimental varieties (MM 96, 97, 98 and TR 14) were obtained from pioneering efforts in Migori County. One of these cassava varieties, Migera, is known for its leaf quality and over half the Master Farmers were familiar with cassava leaf used as vegetable. Odd lots of these cassava cuttings were also provided to members along with fertilizer for planting and multiplication. Early assessment of these varieties is underway, in part using participatory methods led by two graduate students from Masinde Muliro University of Science and Technology. Recognized opportunities for improved cassava production have opened doors to three county extension offices (Bungoma, Busia and Migori Counties), collaboration that was previously difficult to forge. Next efforts will

Figure 6.5 WeRATE striga management approaches and farmer response: maize is overwhelmed by intense striga infestation (left) that is greatly reduced by IR maize (centre). Farmers synthesize field experience to develop a practical, inexpensive strip-crop approach to striga elimination (right)

Photos: WeRATE

focus upon establishing legume understories within cassava production areas (Obiero, 2014).

Clearinghouse assessment

In all, 88 technology packages, field protocols and data report forms were distributed to 24 grass-roots organizations within the West Kenya Action Site. This combined action also led to 27 farmer field days in conjunction with local agricultural extension, farm input distributors and schools. Our Clearinghouse approach proved particularly effective because in the past each project held its own separate meetings and there was little coordination between them in terms of input assembly, site selection, deployment and farmer field days. The Clearinghouse process and participants are more fully described in a report prepared by WeRATE (2014).

Operating within the Humidtropics research landscape

It is perhaps one advantage for an umbrella NGO such as WeRATE to operate effectively on behalf of its members, and another to serve as a complete R4D Platform that also assists CGIAR scientists to undertake difficult developmental research tasks. At the same time, some interests are parallel, such as how to best scale up a promising new technology, while others are tangential, such as monitoring and interpreting farming system trade-off, or interpreting impacts

at a range of scales. In terms of scaling up new crop varieties and farm technologies, WeRATE and its partners have demonstrated considerable success in the areas of imazapyr-resistant maize to combat striga, introduction of improved climbing bean and soybean varieties, and creating demand for BNF technologies, particularly BIOFIX legume inoculants and Sympal blended fertilizer. Crop variety assessment is forwarded through arrangement for pre-release agreements so that farmers become familiar with new crop varieties as they also undergo Kenya's rather lengthy certification and release process.

Working with CIMMYT, KARI and AATF, WeRATE introduced IR maize to tens of thousands of households, creating a massive demand once the product reached stockist's shelves (Woomer *et al.*, 2008). Just as BIOFIX inoculant was licensed by the University of Nairobi to MEA Fertilizers Ltd, the N2Africa Project enlisted WeRATE to field test legume inoculation (Table 6.4), helping to create demand that resulted in an annual threefold increased inoculant production between 2010 and 2013. The development of Sympal fertilizer blend resulted from an even closer relationship because the product resulted from formulation, field testing and refinement by WeRATE and its partners, and within three years hundreds of tons of this blend were reaching farmers through commercial channels. Starting with only 650 kg of improved soybean seed in early 2010, WeRATE farmers reported over 6,000 tons of production after six seasons (three years). Over four years in collaboration with the N2Africa Project, WeRATE members reached over 37,000 households with a 64 per cent adoption of its best practice soybean variety–inoculant–fertilizer blend technology. WeRATE groups not only test and promote new farm products, but also establish their own farm input supply shops that offer 'last-mile' product delivery and offer discounts to members. Systems trade-offs are more difficult to track.

Scientists seek help from R4D Platforms to better understand which trade-offs occur and how these maximize farm production and yield. Within the Western Kenya Action Site, trade-offs occur through the greater recognition and understanding of both chronic and emerging challenges to production, as

Table 6.4 Summary of WeRATE outreach activities in West Kenya over four years (2010–13) through partnership with the N2Africa Project

Outreach action	*Total*
Number of new households	37,464
Number of on-farm demonstrations	355
Inoculant packets distributed	59,231
Legume seed distributed	223 tons
Fertilizer distributed (tons)	320 tons
Master farmers trained	226
Extension manuals distributed	48,938

Source: WeRATE research

Table 6.5 Nutritional composition of soymilk vs cow milk

Constituents	*Soymilk (%)*	*Cow milk (%)*
Proteins	5.7	3.5
Lipids	2.4	4.0
Carbohydrates	1.4	4.2
Minerals	0.8	0.7
Water	90	88

Source: Mulei *et al.* (2011, p. 8)

well as changes in market opportunities. Most farms practise maize–bean intercropping, and the invasion by striga and plant diseases have forced farmers to change their traditional crops and practices. Farmers belonging to one WeRATE founding member (MFAGRO in Vihiga) were the first in Africa to eradicate striga by adopting new control practices and blending them into acceptable community practice (AATF, 2006). Invasion of MLNV into new areas forces farmers to change crops, and WeRATE has sensitized the farming community to the threat and appropriate response to this rapidly spreading virus disease.

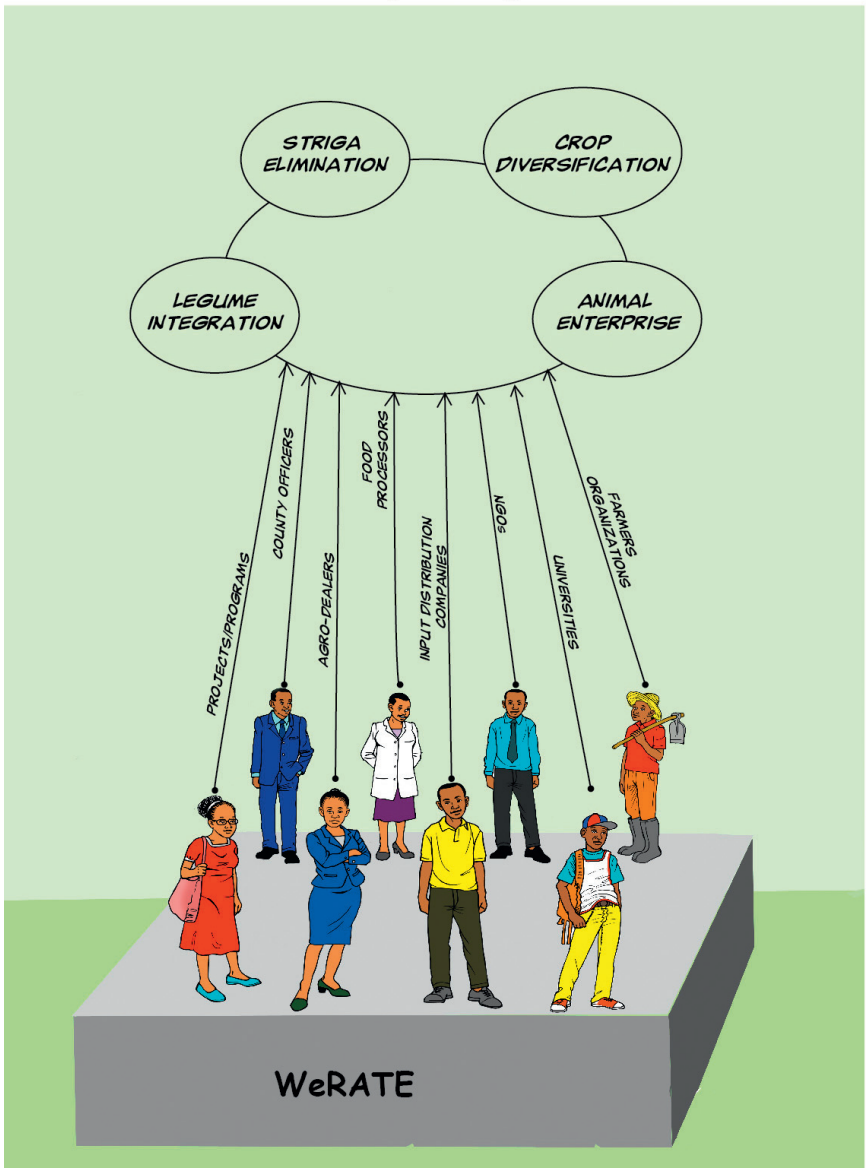
Trade-offs also occur among households adopting climbing beans and soybean. Climbing beans require support and several innovative staking systems have appeared. Soybeans were first intended for processors in urban markets but over time strong and more accessible local markets have emerged including buyers engaged in more localized processing and homemakers that better understand the nutritional advantages of this crop (Table 6.5). Even with its available detailed farming systems baseline, WeRATE is not well equipped to conduct complex trade-off analyses, but is a potential willing partner to scientists that step forward with resources, work plan and technical backstopping to do so.

WeRATE works on multiple crops but those of greatest interest to its members are maize, sorghum, beans, soybean and more recently root crops (cassava and sweet potato). Within the present scope of activities, WeRATE is able to simultaneously work on a wide range of field crops because of its participatory approach where individual member groups subscribe to different seasonal Clearinghouse activities. Admittedly, studies involving natural resource management, trees or livestock are longer term and require a different participatory structure.

Lessons learned and way forward

A large advantage exists in working with an umbrella NGO operating as an IP. It serves as a local coordinator for simple on-farm technology testing, farmer training and impact assessment and as a local partner for more complex research investigations. Its direct links to large numbers of farmers offers an alternative

WeRATE PLATFORM (KENYA)



extension mechanism, especially where formal agricultural extension is weak. An umbrella structure allows for member groups to subscribe to specific opportunities of interest through an Agricultural Technology Clearinghouse approach.

Empowering an effective IP requires time and resources. Many members are unable to develop their own field campaigns and extension materials. In the case of umbrella organizations, officers of member groups are often unable to serve in a second, larger capacity requiring that the Platform appoint its own officers. Financial operations are challenging as the Platform must receive funds in a timely manner, distribute them to member groups according to specific agreement and assemble statements to acceptable standard. Some grass-roots WeRATE members, including those reliably submitting data and conducting dynamic field days, find it difficult to report finances to CGIAR standards, resulting in delayed release of funds the following season or year. Indeed, recognizing Platform shortcomings and developing incentives and training around them is a continuous process.

Real progress is made in improving productivity of maize–legume cropping systems but the individual households remain locked into poverty. The inputs required for improved production, such as IR-maize, specific fertilizers, legume inoculants, are known and available through agro-dealer channels, but poor households cannot afford them. Conducting technology demonstrations and farmer field days, and highlighting the achievements of early innovators is not sufficient for widespread impacts, and WeRATE and its partners must now become engaged in more innovative and better funded outreach. Value-added processing is critical to raising living standards in the smallest farms and this promising trend is noted among WeRATE members.

WeRATE was only recently formalized, and has not yet fully engaged in alliance with others, including the recently established county extension services. Previously, agricultural extension was managed at the national level, but constitutional changes have 'devolved' this responsibility to the counties. There are seven counties where WeRATE operates, it must better understand the different county rural development plans and find means to operate within them. On the other hand, WeRATE members have to establish strong linkage with the commercial sector, both farm input distributors and commodity buyers.

After a lengthy approval process by the NGO Board of Kenya, WeRATE now has its own bank accounts (both US$ and KES) and a KRA Pin Number. As a result, it will no longer manage funds through member accounts. This should lead to better financial reporting to supporters.

Challenges

The WeRATE R4D Platform has demonstrated its ability to conduct on-farm technology testing with a variety of research partners. Its Master Farmers have collected useful findings on crop yield, legume root nodulation, pest and diseases, and crop varietal comparison. Initially, some research partners were not in tune with the operations of the Platforms, in part because of expectations of excessive data collection and an unclear division between their project's research and outreach objectives. These differences were resolved through dialogue and development of mutually agreed field protocols. One challenge is to rectify the intention of some research projects to dictate where specific technologies are to be tested, and micromanage participation and incentives in a way that is potentially divisive to the Platform as a whole. For an innovative partnership to operate most effectively, a Platform must be seen as the leader of technology outreach, not inexpensive field labour. Indeed, WeRATE is operating along principles and with partners that permits this pioneering IP to advance proven technologies and new research products to their intended beneficiaries, Kenya's small scale farmers!

Appendices

See pages 113–115.

Appendix 6.1 WeRATE members, their areas of operation, farmer representation and group activities

WeRATE member	*County*	*Email address*	*Reach (households)*	*Women chapter*	*Youth chapter*	*Liaison officers*	*Input shop*	*Seed production*	*Market produce*	*Process legumes*
ARDAP	Busia	bonomondi2007@yahoo.com	10000	1	1	5	0	1	1	1
AVENE	Vihiga	avenecomdev@yahoo.com	1800	1	1	6	1	1	0	1
BUFFSO	Busia	livingstoneosuru@yahoo.com	1600	1	1	9	1	1	1	1
BUSCO	Kakamega	dorcasakeyo@yahoo.com	1200	1	1	9	0	1	1	1
BUSOFA	Bungoma	jothammandila@yahoo.com	1270	1	1	5	1	1	1	0
BUSSFFO	Bungoma	bussffo@yahoo.com	1230	1	1	4	1	1	1	1
HAGONGLO	Siaya	magagaalex@yahoo.com	400	1	1	6	1	1	1	1
HECOP	Kisumu	pkisimba@yahoo.com	1500	1	1	5	1	0	0	1
KENAF	Kakamega	etemesibrian@yahoo.com	4000	1	1	4	0	1	1	0
KHG	Kakamega	joseongoma@yahoo.com	350	1	1	4	1	1	1	1
KUFGO	Migori	wnyangaria@gmail.com	21	0	0	1	0	1	1	0
MFAGRO	Vihiga	mfagrofarmers@gmail.com	800	1	1	5	1	1	1	1
MUDIFESOF	Kakamega	mumiassoya@yahoo.com	1500	1	1	6	1	1	1	1
MUUNGANO	Busia	muunganodg@yahoo.com	600	1	1	5	1	1	1	1
OWDF	Busia	owdf20107@hotmail.com	4680	1	1	2	1	1	1	1
ROP	Kakamega	drsanjawa@gmail.com	30000	1	1	6	0	1	1	1
RPK	Vihiga	kalehah@gmail.com	300	1	1	5	0	1	1	1
SCC-VI	Siaya	paul.wabomba@yahoo.com	2850	1	1	5	0	1	1	0
SCODP	Siaya	scodp2012@gmail.com	4320	1	1	7	1	1	1	0
UCRC	Siaya	rachel.adipo@gmail.com	4000	1	1	3	0	1	1	0
KESOFA	Migori	kesofasoya@yahoo.com	6000	1	1	12	0	1	1	1
Total leverage			78421	0.95	0.95	114	12	0.95	0.90	0.71

Appendix 6.2 WeRATE member interviews conducted 17–20 February, 2015

WeRATE member interviews conducted on 17–20 February, 2015
Interviewed by Renee Bullock, IITA Gender Specialist

1 Interviewee Name: Boniface Omondi – ARDAP

a) How has WeRATE helped you or your work?
   (i) WeRATE has helped farmers gain access to new technologies. It has linked research institutions and farmers. For example, new germplasms have been used.
   (ii) WeRATE has helped build capacity by enabling farmers to understand technology dissemination and productivity.

b) How could WeRATE be improved?
   (i) Since farmer involvement is key, a participatory approach is needed. We could help farmers to understand the process, such as identifying problems and working together.
   (ii) Sometimes they do not understand interventions that are developed and why they are brought to them.
   (iii) The platform could link local organizations to input suppliers and larger input distributers.

2 Interviewee Name: Pam Ogutu – HAGONGLO

a) How has WeRATE helped you or your work?
   (i) WeRATE has helped in facilitation, training and dissemination of how to use technologies and value addition.

b) How could WeRATE be improved?
   (i) More trainings are needed to reach farmers, we should find ways to reach larger areas.
   (ii) We should develop more technologies on different crops, i.e. diversification.
   (iii) We need more gender action and to work together with youth to make a difference.

3 Interviewee Name: Dorcas Akeyo – BUSCO

a) How has WeRATE helped you or your work?
   (i) Value addition such as processing has empowered women to earn money from products that include milk, flour, and crunchies.
   (ii) We sell grains to companies in Nairobi and villages.

b) How could WeRATE be improved?
   (i) We need to empower women and youth by encouraging value addition.

4 Interviewee Name: John Onyango – KESOFA

a) How has WeRATE helped you or your work?

b) How could WeRATE be improved?

(i) We need to strengthen governance of the platform. During elections there is a need to pull from different regions so they are all included and not any one area is favoured.

(ii) In management we should create a position like a programme manager to report to. That one person manages others and reports to Project Coordinators.

5 Interviewee Name: Rachel Adipo – UCRC

a) How has WeRATE helped you or your work?

(i) We have benefited from soya. Prices of soya used to be very high and therefore unaffordable. Now the prices are lower and more people can buy them.

(ii) Marketing links have been created between farmers and the platform.

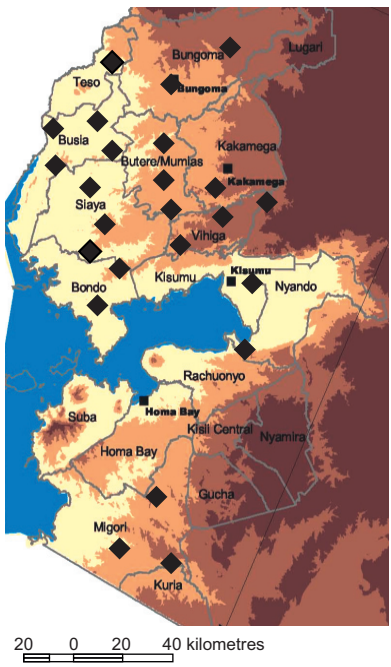
(iii) Field days increase awareness.

(iv) Household nutrition and soil fertility have improved.

b) How could WeRATE be improved?

(i) Communication could be improved. Rachel would like to be directly contacted and would like more communication with members in her organization so they realize the importance of WeRATE activities.

Appendix 6.3 Agro-ecological zones in the West Kenya action site



Three major agro-ecological zones occur in WeRATE's Action Area

Lake Victoria Basin (1125–1300 masl): semi-arid to semi-humid climate, maize-based cropping with some cassava and rice. Failing cotton.

Lower Midlands (1300–1500 masl): sub-humid climate with rolling hills and plateaus, maize–bean intercropping with sweet potato, banana. Large sugar plantations and out-growers. Failing tobacco.

Upper Midlands (1500–1800 masl): humid climate, mountainous terrain, maize–bean cropping with potato, pea and vegetables. Tea out-growers.

Altitude in meters

< – 1300	Lake Basin	WeRATE Site
1301–1500	Midlands	
1501–1800	Upper Midlands	
> – 1800	Highlands	

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