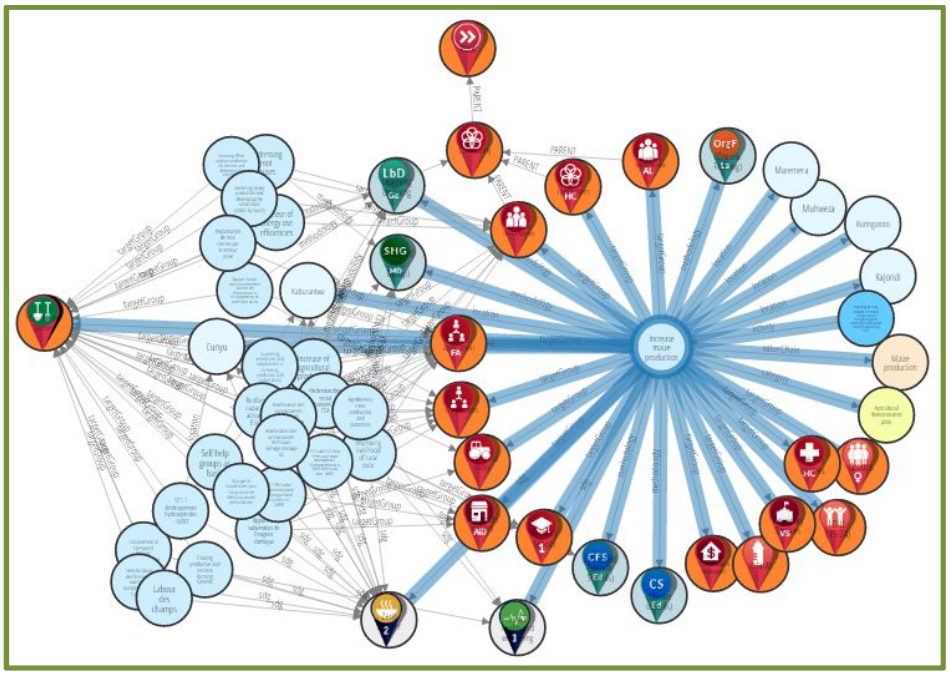
Options for Alignment and Synergy to increase the impact of PAPAB -

A pilot for the Province Cibitoke, Burundi



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Cover: Behind the scenes - Relations in DevSAT, showing on the left the target group small holder famer, the projects in which that group is the target group, and on the right an activity on maize characterized by target groups, methodologies, SDG's, value chain, and locations.

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Abbreviations and acronyms

ABELO	*Association Burundaise des Elus Locaux*
AVSI	*Associazione Volontari per il Servizio Internazionale*
CoP	Chief of Party
CCDC	*Comités Communaux de Développement Communautaires*
CDC	*Comités de Développement Collinaires*
COPED	*Conseil Pour l'Education et le Développement*
CPDC	*Comités Provinciaux de Développement Communautaires*
DevSAT	Development Synergy and Alignment Tool
DFS	*Direction de Fertilité de Sol (MINAGRIE)*
DPAE	*Direction Provinciale de l'Agriculture et Elevage*
DSIA	*Direction des Statistiques et Informations Agricoles (MINAGRIE)*
EKN	Embassy of the Kingdom of the Netherlands
EU	European Union
FAO	World Food Organization
FGI	Fertile Grounds Initiative (*Initiative Terre Fertile*)
GODAN	Global Open Data in Agriculture and Nutrition
GSADR	*Group Sectoriel Agricole et de Développement Rurale*
GSSAME	*Groupe Sectoriel Sécurité Alimentaire et Moyens d'Existence*
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Center
INDC	Intended Nationally Determined Contributions
ISABU	*Institut des Sciences Agronomiques du Burundi*
ISFM	Integrated Soil Fertility Management
IUCN	International Union for Conservation of Nature
MEEATU	*Ministère de l'Eau, de l'Environnement, de Aménagement du Territoire et de l'Urbanisme*
MINAGRIE	*Ministère de l'Agriculture et de l'Elevage*
MSP	Multi-Stakeholder Partnership
NGO	Non-Governmental Organization
OBPE	*Office Burundais pour la Protection de l'Environnement*
OCHA	Office for the Coordination of Humanitarian Affairs
OP	*Organisations de Producteurs*
PAPAB	*Projet d'Appui à la Productivité Agricole au Burundi*
PIP	*Plan Intégré du Paysan* (Integrated Farm Plan)
PNIA	*Plan National d'Investissement Agricole*
PNSEB	*Plan National de Subvention des Engrais au Burundi*

PNUD	*Programme des Nations Unies pour le Développement* (UNDP)
RBU	*Réseau Burundi 2000+*
SCAD	*Projet de Solidarité Communautaire pour l'Auto Développement* (Fanning the Spark)
SNPACC	*Stratégie Nationale et Plan d'Actions sur le Changement Climatique*
SDG	Sustainable Development Goal
WB	World Bank
WEnR	Wageningen Environmental Research (ex-Alterra)

1. Introduction

Burundi has since long a challenge in meeting the food demands of its fast growing population for various reasons. Unfortunately, the last few month food security is further deteriorating across the country (WFP, 2016) with associated risks that development efforts will stop, and focus will be only on humanitarian aid that will further throw back the country in time. Efforts to increase food security through increase of production capacity are therefore urgently needed.

The project PAPAB (*Projet d'Appui à la Productivité Agricole au Burundi;* IFDC, 2015) was designed on the basis of the outcomes of the Theory of Change workshop (January 2015) in the framework of Fertile Grounds Initiative, co-organized by Alterra Wageningen UR (since July 2016 renamed into Wageningen Environmental Research; WenR), International Fertilizer Development Center (IFDC) and ZOA with the main stakeholders in Burundi (Desalos & van Duivenbooden, 2015). PAPAB aims to sustainably increase food production in Burundi by promoting market-oriented, climate-resilient and sustainable agricultural techniques, supported by targeted fertilizer subsidies. The project uses the PIP approach (Kessler et al, 2015), a participatory approach centred on integrated crop-soil-farm management, and cooperation between stakeholders at all levels. PAPAB aims to improve the food security of at least 480,000 farming families. Figure 1.1 shows the main locations where PAPAB is active. This includes the collines where the PIP approach is being implemented, province capitals for support to the subsidized fertilizers, and Bujumbura for the coordination and remainder of the activities.

The project consortium includes four partners: IFDC (main contractor), WEnR, Oxfam Novib and ZOA. In addition, a number of local organizations, such as ADISCO, OAP, and Réseau Burundi 2000^{+} are involved, as well as some Dutch enterprises (e.g. Soil Cares and Trimpact BV). There remains a natural link with FGI spearheaded by WEnR (van Duivenbooden et al 2015). To further increase the impact of PAPAB (and of all other projects for that matter) alignment and synergy (A&S) of activities of existing projects and of other new organizations and enterprises are urgently needed to avoid a collapse

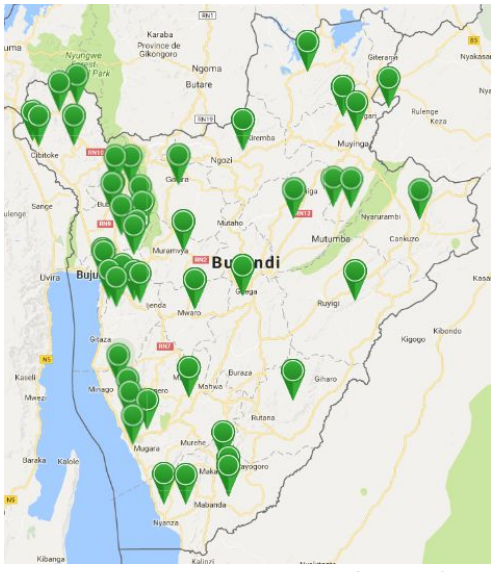


Figure 1.1. *The main locations of PAPAB's activities in Burundi.*

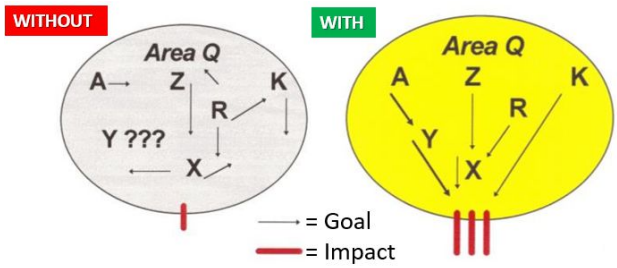


Figure 1.2. *Impact as a function of the ability to align and create synergy and use each other's work to take it a step further (van Duivenbooden, 1995).*

in food security. The A&S principle is best explained by comparing the expected impact in the situation with and without alignment and synergy (Figure 1.2). In the left subfigure, all organisations go their own way without taking stock of work done by others. Some may not know what to do. In the right subfigure organisation 'A' delivers results that organization 'Y' can use, and expand or improve to reach the common goals that are now named the Sustainable Development Goals (SDGs).

However, it has been recognized by many organizations that still today humanitarian aid, development and research projects are frequently being executed in isolation (as illustrated in Figure 1.3a with the apparent barrier symbolised by the dotted red line). The consequence is an impact below its potential, and loss of various resources such as inspiration from the stakeholders, time and money.

A first step for improvement could be the linking of projects with common characteristics (Fig. 1.3b) to exchange experiences and results (serving in the same time also capacity building). The next step will be the identification of options for synergy and activities between projects with different characteristics (Fig. 1.3c). Finally, the partners identified create increased impact through a new project or just some activities with added value to the existing ongoing projects of each organization (Fig. 1.3d). When this process of creating synergy, integration, and cooperation between various stakeholders can be facilitated, impact will sustainably increase.

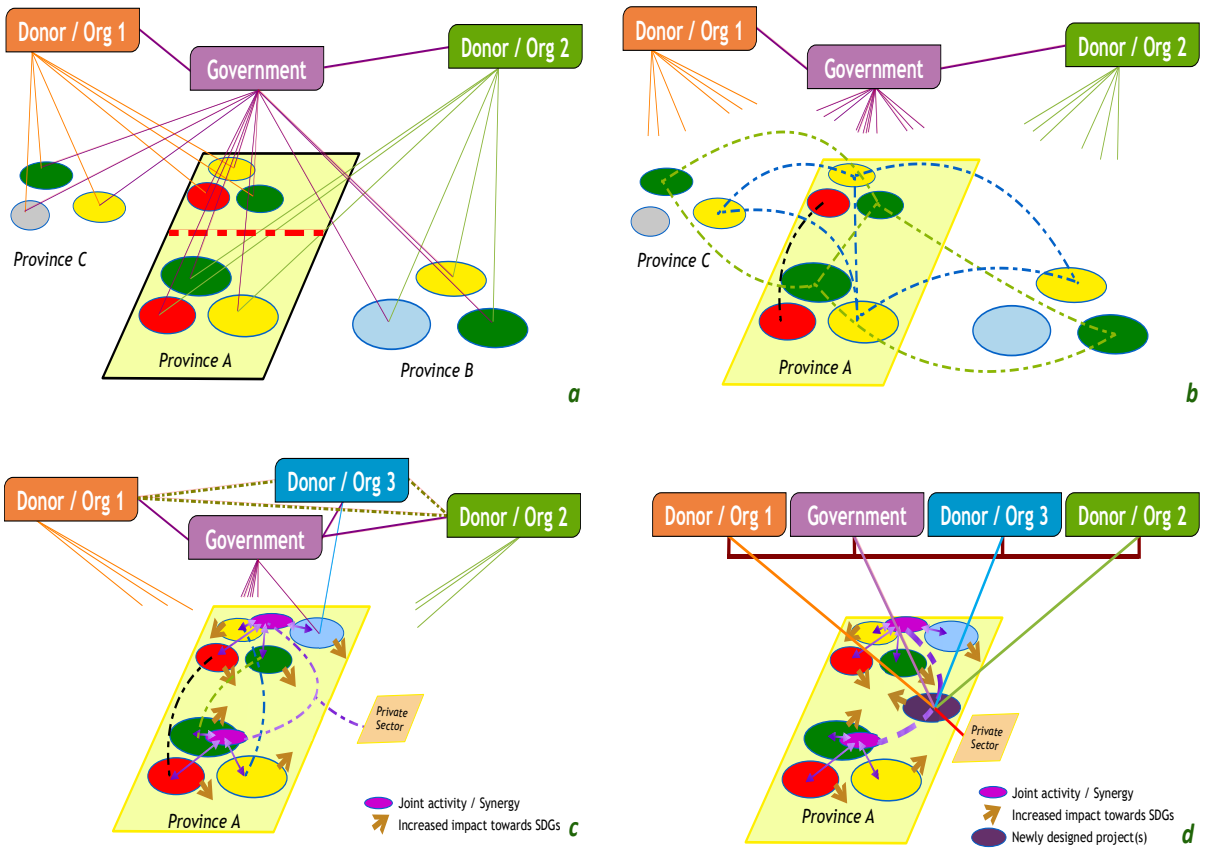


Figure 1.3. *The actual situation without exchanges between the projects (a), and the three phases of linking projects to create added value: b) linking of same theme projects across provinces within a country, c) searching for synergy between projects of different themes, and d) creating increased impact through a new project or specific joint activities.*

The mission of the social enterprise Trimpact BV is to increase the impact of development projects to efficiently realize the Sustainable Development Goals (SDGs). To realize this, Trimpact has built a prototype software tool for the synergy and alignment of development (including humanitarian aid and research), named Development Synergy & Alignment Tool (DevSAT).

The goals of DevSAT through its users are: *1)* to improve planning through linking of national (e.g. PNIA in Burundi) and international strategies (SDGs), and mapping of '*who does what, where, how, when, and their deliverables*' to identify gaps and prioritize the target region, groups, value chain, etc., *2)* to increase efficiencies during the implementation phase through linking with other projects mapped to facilitate exchange of knowledge, capacity building, working together, and based on the results obtained to better define the required additional impact -oriented activities or common next steps, and *3)* to increase impact by identification of up-scaling zones through existing similar projects.

DevSAT is designed to be a daily tool to help all stakeholders (humanitarian aid, development and research organizations, donors, entrepreneurs, planners, etc.) to work together in an integrated way towards the SDGs. It facilitates to take stock of activities that are all georeferenced to the smallest administrative unit (i.e. colline in Burundi), and to identify the various links between these activities currently based on five main characteristics: SDG[1], Target Group, Value Chain, Target Landscape Unit, and Methodology. For example, a clear link between humanitarian aid and development projects exists through the target group *'Vulnerable people'* and methodologies used (Table 1.1).

In practice, DevSAT provides an overview of *'who is doing what, where, how and when, and what can be delivered to others*' (in maps and tables) and similarities. Mapping can be done by the user, based on a) the combination of five main characteristics, and b) filtering on location, National Plans (e.g. PNIA), project implementers, donors, deliverables, and similarity. To be able to make readable maps, around 700 markers have been designed (for a selection see Figure 1.4). A bilingual manual in English and French is available (van Duivenbooden, 2016a).

Table 1.1. *Target groups and methodologies specified in DevSAT linking humanitaran aid and development projects.*

Target groups	Methodologies (HA = Humanitarian Aid)
Vulnerable people > Analphabetes	HA > Cash transfers
Vulnerable people > Asylum seekers	HA > Cash transfers > CfW (Cash for Work)
Vulnerable people > Chronically ill	HA > Cash transfers > CTP (Cash Transfer Programme)
Vulnerable people > Chronically ill > PLHIV	HA > Cash transfers > E-money - Coupons
Vulnerable people > Chronically ill > PLLep	HA > Cash transfers > VfA (Vouchers for Assets)
Vulnerable people > Disabled	HA > Food supply
Vulnerable people > Extremely Poor	HA > Food supply > Emergency food
Vulnerable people > Homeless people	HA > Food supply > FfA (Food for Assets)
Vulnerable people > IDPs	HA > Food supply > FfW (Food for Work)
Vulnerable people > IDPs > Returned IDPs	HA > Food supply > Free Meals
Vulnerable people > Landless people	HA > Free health care
Vulnerable people > LGBTI	HA > Free health care > Emergency vaccinations
Vulnerable people > Malnourished	HA > Free health care > Medical services
Vulnerable people > Orphans	HA > Free health care > Medicines
Vulnerable people > Refugees	HA > Free supplies
Vulnerable people > Refugees > Returned refugees	HA > Free supplies > agri. inputs
Vulnerable people > Stateless people	HA > Free supplies > school materials
	HA > Shelter & Semi-permanent housing

[1] Early 2017, SDG-targets will be added in the project information form of DEVSAT.

Figure 1.4. *A selection of the markers used in DevSAT: SDGs; TGs = target groups; TLUs = target landscape units; VCs = value chains; Meths = methodologies; SDG-coloured circle and other with >> sign = more than one at that location.*

Compared to other tools, such as International Aid Transparency Initiative (IATI from donors), Dev-Info (from UNDP), AgPack (from GODAN) and Open Reporting System (ORS-Sahel from OCHA), that are predominantly focussing on reporting results, DevSAT is a development planning and execution tool (for more details on the comparison, see Table A1.1; Annex 1).

DevSAT has six features that create added value, because of *a)* the linking of international development strategies to national development plans, *b)* the inclusion of the 17 SDGs and their specific targets, *c)* being a daily interactive tool for all stakeholders to analyse the linkages between projects to identify new activities that add value to the ongoing ones to increase impact of all, *d)* being able to link activities of projects on the basis of their main characteristics at the lowest administrative unit (i.e. colline in Burundi), *e)* map activities together with three types of geographical information (roads, altitude, satellite images), and *f)* the inclusion of features of being informed of new activities that started in the same geographical area or subject domain (options for saving time and other resources) and to actively contact other projects.

PAPAB primarily focuses on minimizing the (potential) humanitarian crisis in Burundi by increasing food security and private sector development in agriculture (farmers as entrepreneurs), but also aims to make a tangible contribution to stability in the country, and to gender, family planning, environment, water management and climate adaptation. It will also develop synergies with other projects within Burundi. For the latter, DevSAT is being tested in a pilot phase focussing on on-going projects funded by the Netherlands in the province of Cibitoke. In addition, there are projects in other provinces filled in DevSAT by various organizations (NGO's and private sector).

This report describes the main characteristics of PAPAB based on the functionalities of DevSAT (Chapter 2) and the preliminary linkages of PAPAB to other projects followed by some recommendations (Chapter 3). Chapter 4 provides the conclusive remarks.

2. Main characteristics of PAPAB

This chapter describes the details of the project on the basis of information included in DevSAT. The structure of the project proposal (IFDC, 2016) is being followed, with two main components.

In DevSAT the relationships are made clear. Figure 2.1a illustrates that within PAPAB the main characteristics are being covered, and that through these always linkages exist with other projects (light blue circles). This is further illustrated in Fig. 2.1b where an activity is being connected to PAPAB through three different characteristics. Because these figures are difficult to interpret in the following subsections, maps will be used.

The targets (or subgoals) within the SDGs have not yet been determined by PAPAB nor by most other projects that started before September 2015. Therefore, a collaboration with UNDP to have projects to determine the SDG target they address neems required to take the next step.

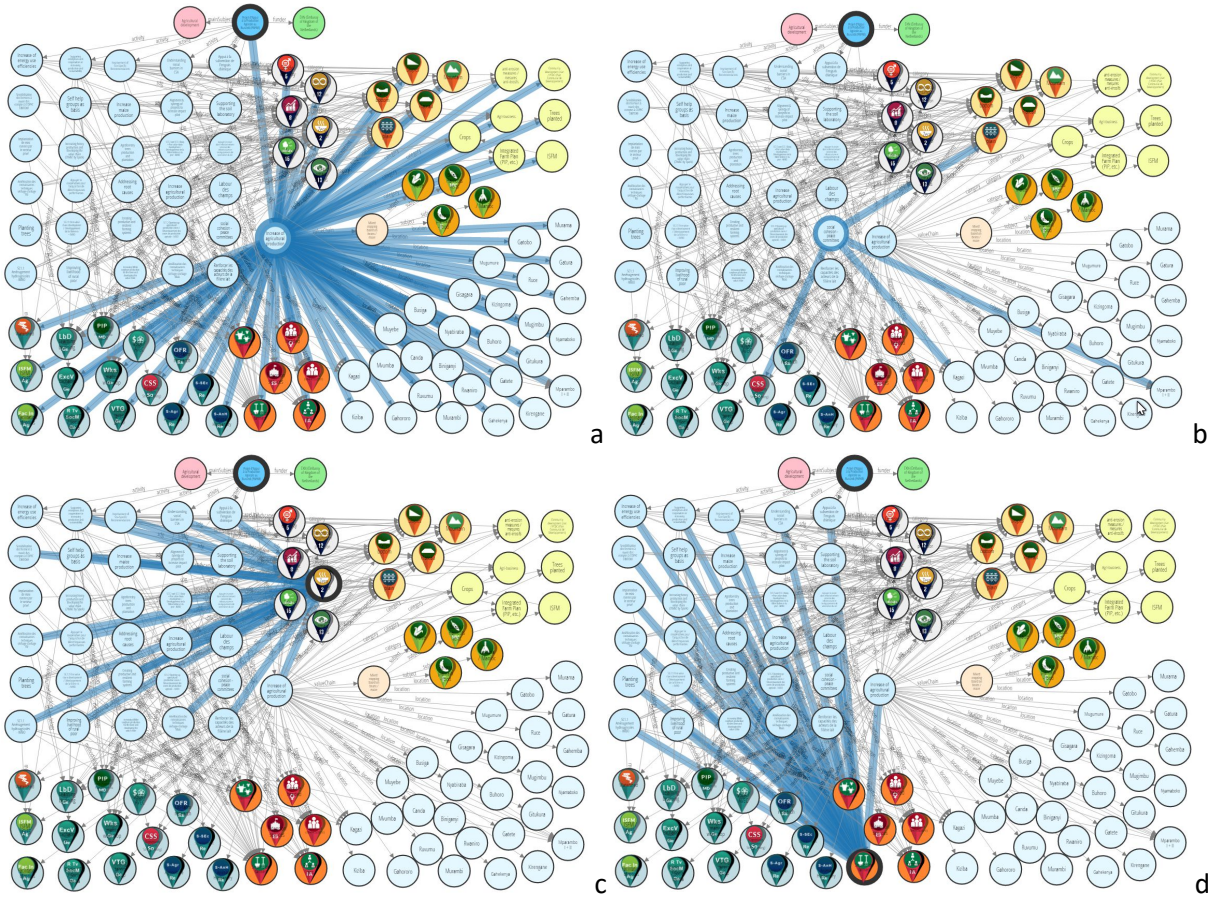


Figure 2.1. Project PAPAB (dark blue with one activity highlighted in the centre) with a) links to methodologies (green markers), target groups (red markers), locations (very light blue cercles), value chain (light green markers), target landscape unit (orange markers) and SDGs (black markers), and other activities (light blue cercles), b) three different links of the PAPAB activtiy to another project, c) linkages through SDG2, and d) linkages through the targert group smallholder farmers.

2.1 Consolidation of fertilizer availability

This first main component focusses in brief on all aspects of the chemical fertilizer subsidy program. It has four subcomponents that are briefly discussed below.

2.1.1 Improvement of the distribution of fertilizer (P1.1)

This activity P1.1 is being executed in close collaboration with MINAGRIE-DFS in all provinces (Figure 2.2). Its main characteristics are listed in the box in that same figure.

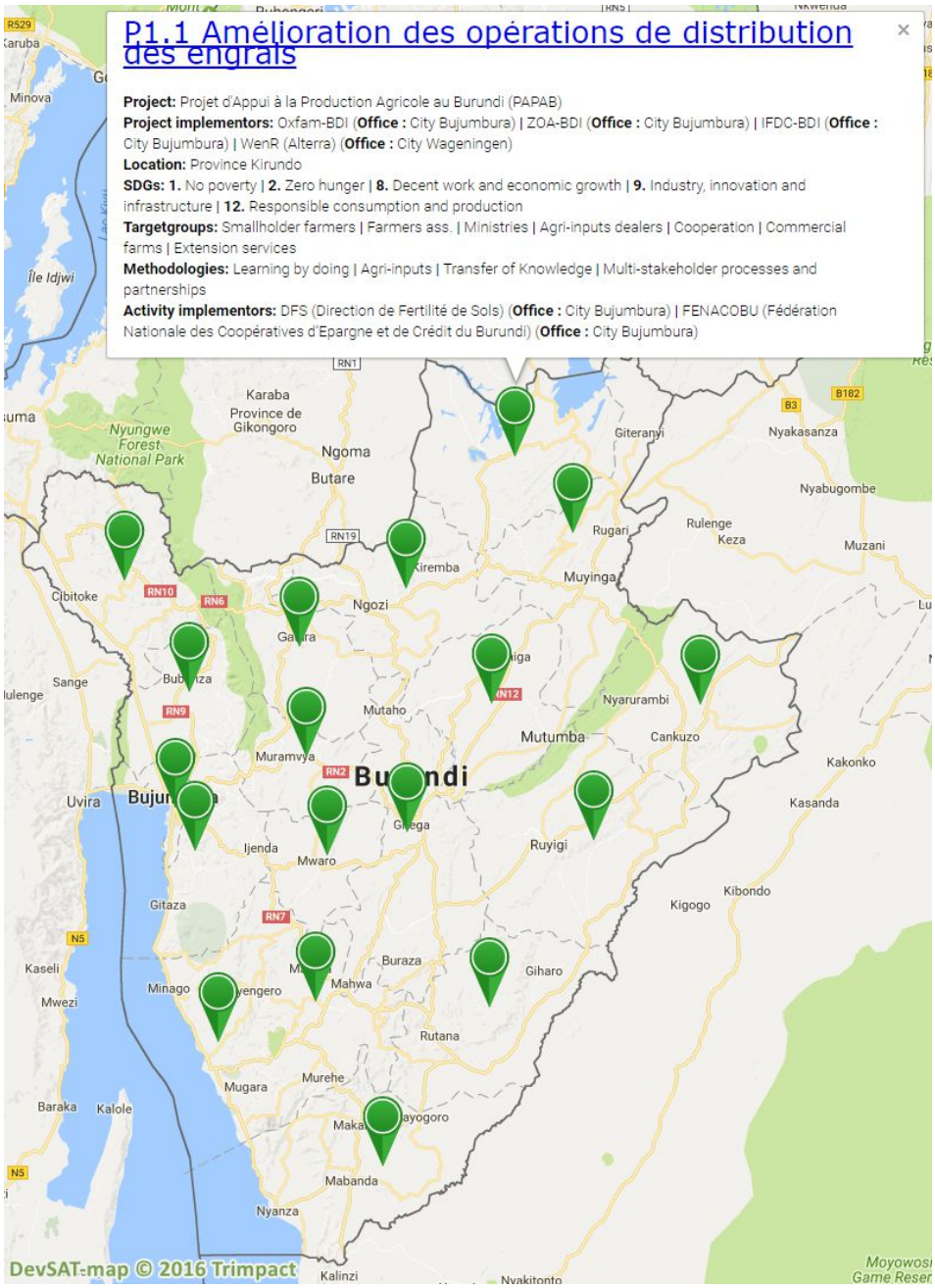


Figure 2.2. Locations of improving the distribution of the fertilizer.

2.1.2 Increasing the demands matched (P1.2)

This activity P1.2 is being coordinated out of Bujumbura. Its main characteristics are listed in the box in that Figure 2.3.

Figure 2.3. Locations of the activity to increase the demands matched.

2.1.3 Technical and financial management of PNSEB (P1.3)

The activity P1.3 on the technical and financial management of PNSEB (*Plan National de Subvention des Engrais au Burundi*) is also carried out in Bujumbura. Its main characteristics are listed in the box in that Figure 2.4.

Figure 2.4. Locations of the activity to manage the PNSEB.

2.1.4 Communication on PNSEB (P1.4)

Communication on PNSEB is also carried out in Bujumbura. The main characteristics of P1.4 are listed in the box in Figure 2.5.

Figure 2.5. Locations of the communication activity on PNSEB.

2.2 Increase of production, resilience and organisation of farmers

The second component is predominantly being carried out in six provinces and 15 communes by ZOA and Oxfam in collaboration with the national NGOs RBU, ADISCO, and OAP according to the following distribution:

- Cibitoke: Buganda, Rugombo (ZOA);
- Makamba : Makamba, Nyanza Lac (ZOA);
- Muyinga: Giteranyi, Buttihinda (ZOA & RBU);
- Bururi: Rumonge Burambi (ZOA);
- Bubanza: Rugazi, Bubanza et Musigati (OXFAM & ADISCO) ;
- Bujumbura Rural: Kanyosha, Nyabiraba et Mubimbi (OXFAM & OAP).

Figures 2.6 to 2.10 show in some detail the locations of the collines using road, and terrain maps, and satellite images. These figures show the benefit of such maps to quickly compare locations, e.g. in terms of access to roads (markets; Fig. 2.6a) altitude (Fig. 2.6b) and land use (Fig. 2.6c). Especially, the satellite images can be used to get a better overall impression of the target area, even before going into the field.

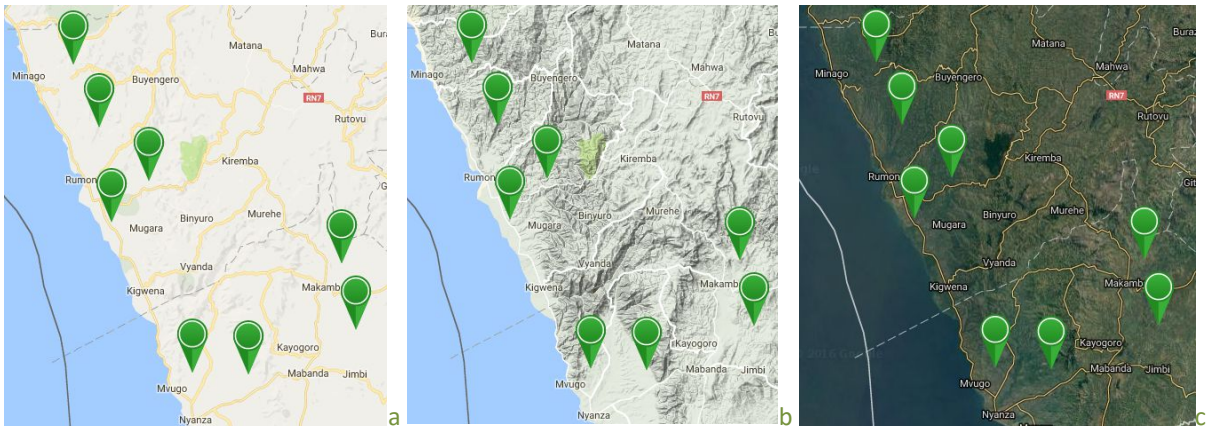


Figure 2.6. The locations of the activities of PAPAB in the provinces of Rumonge and Makamba using the a) road map, b) topographic map, and c) satellite image.

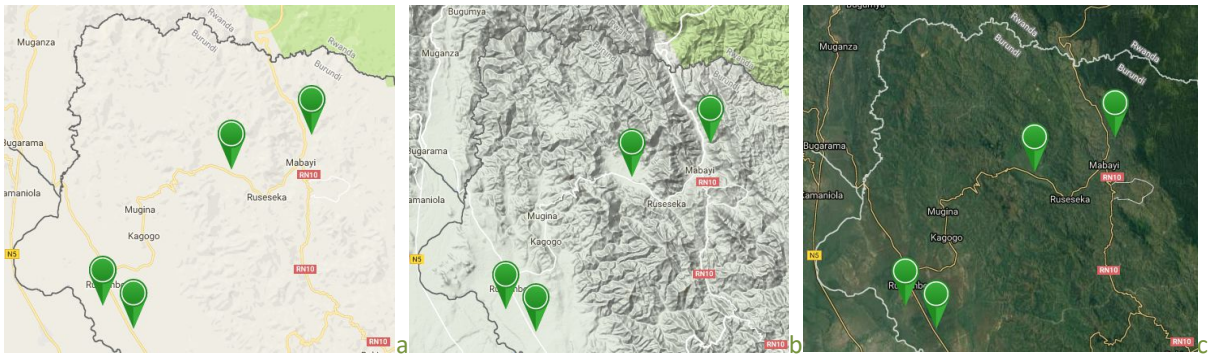


Figure 2.7. The locations of the activities of PAPAB in the provinces of Cibitoke using the a) road map, b) topographic map, and c) satellite image.

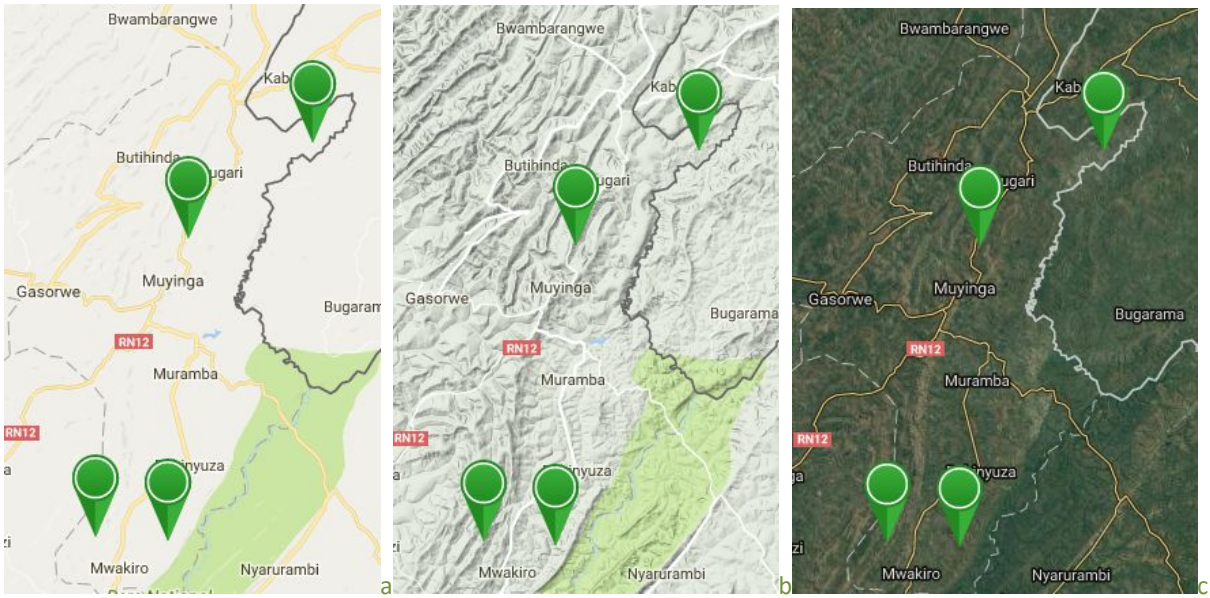
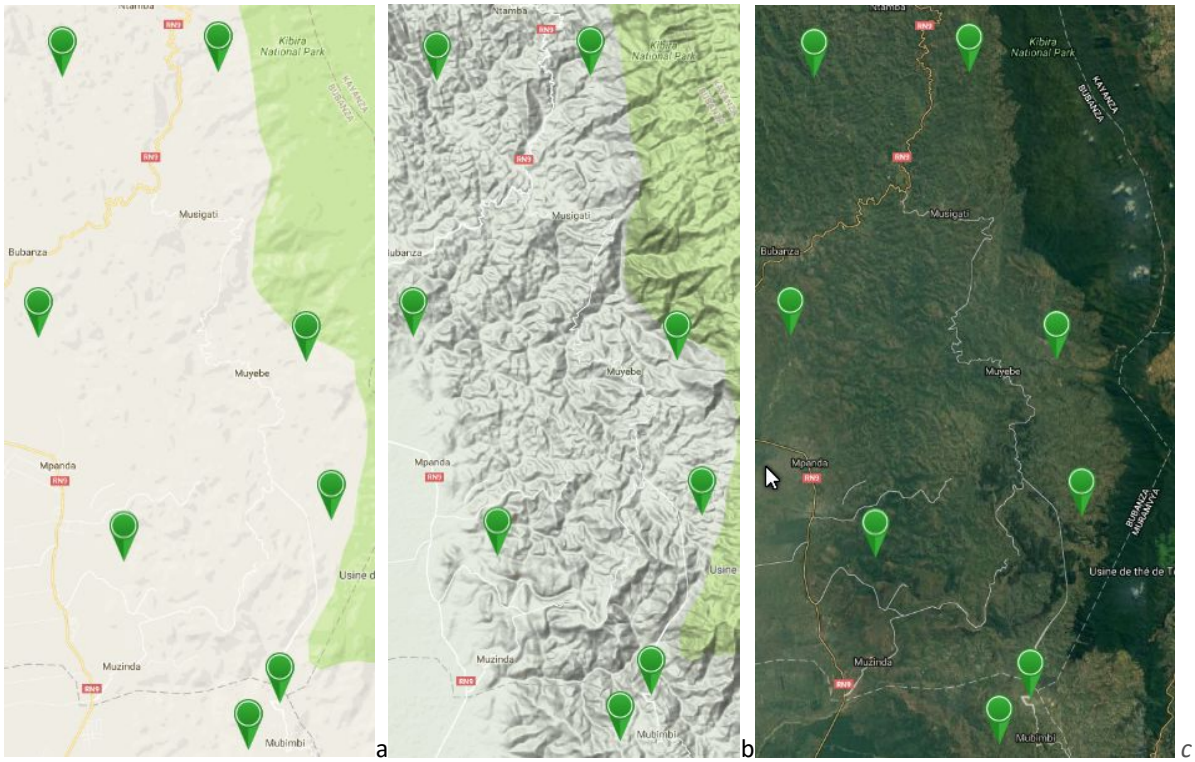
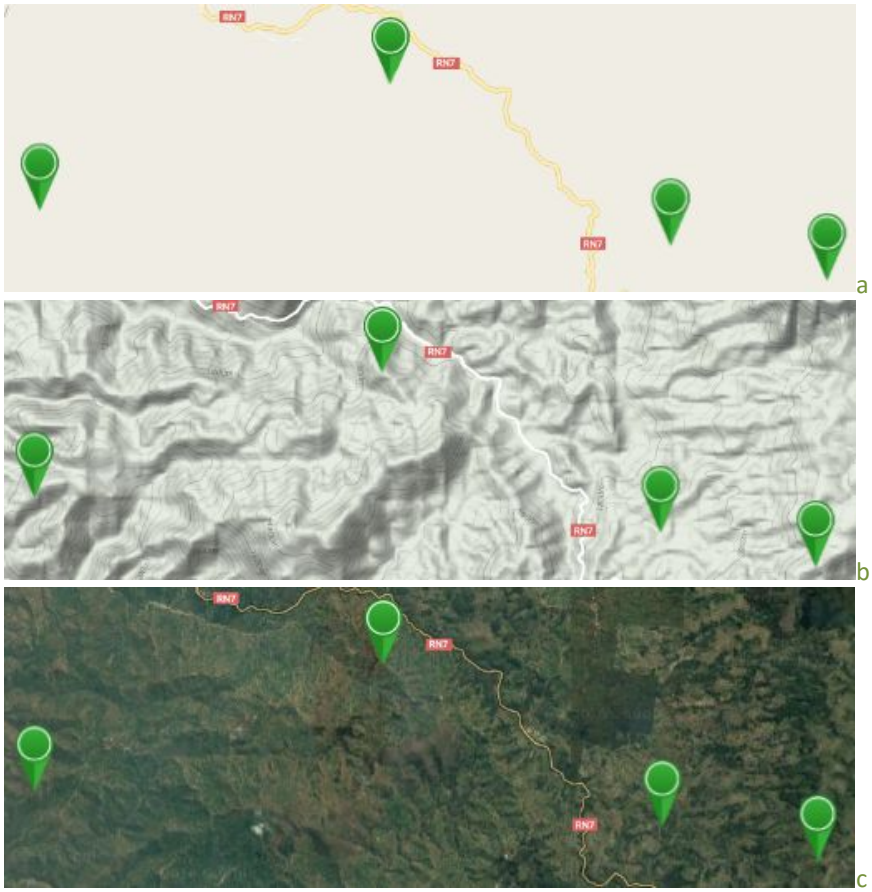


Figure 2.8. The locations of the activities of PAPAB in the provinces of Muyinga using the a) road map, b) topographic map, and c) satellite image.



a b c

Figure 2.9. The locations of the activities of PAPAB in the North of provinces Bujumbura Rural (lowest two) and in the province Bubanza using the a) road map, b) topographic map, and c) satellite image.



a
b
c

Figure 2.10. The locations of the activities of PAPAB in the southern part of province Bujumbura Rural using the a) road map, b) topographic map, and c) satellite image.

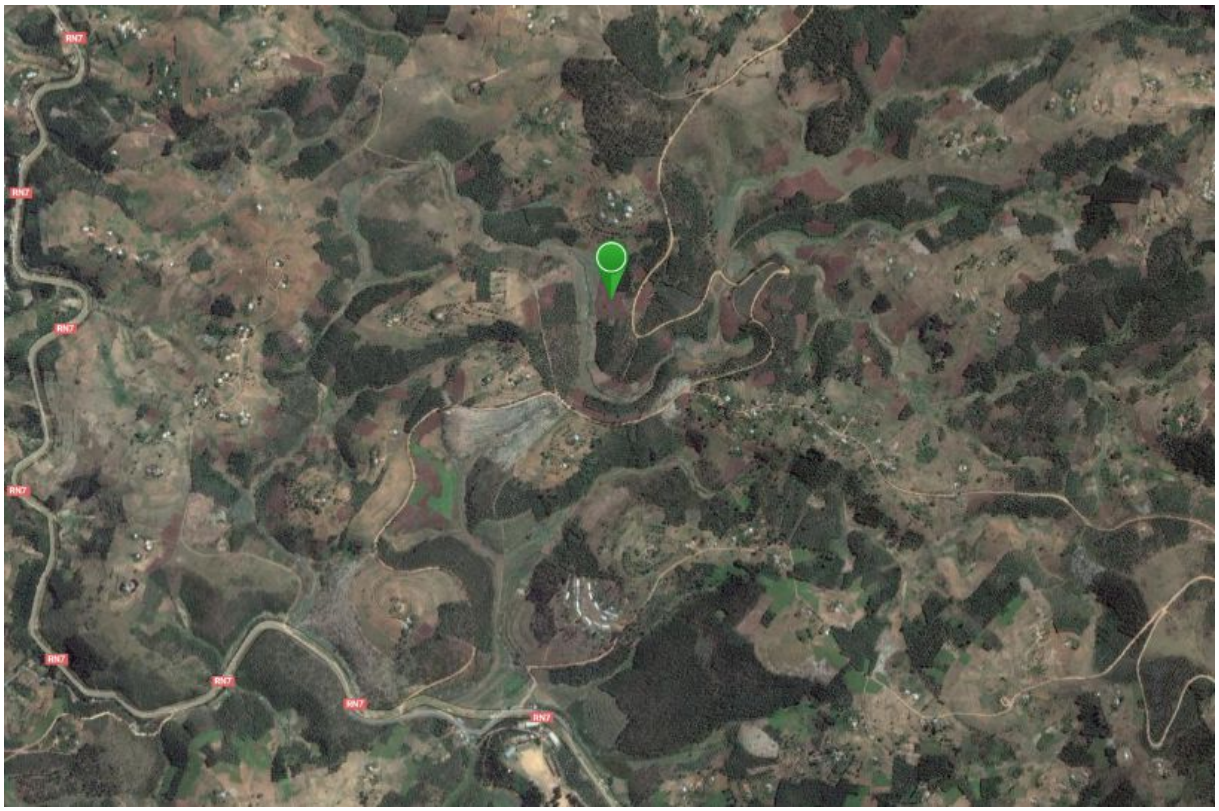


Figure 2.11. Land use in the colline Nyabiraba (Bujumbura Rural)

Figure 2.11 zooms in to an activity site, clearly demonstrating the influence of the roads on the cover of natural vegetation, especially on the left hand site in the picture. It would be interesting to test whether the soils in that part are lower in soil fertility due to lack of inputs as fertilizer and manure, or that it makes no difference because of the road it was easier for farmers to get manure from Bujumbura or other places to maintain their soil fertility.

Compared to the project proposal some new activities are being developed to increase the impact of PAPAB. In the following subsections various characteristics will be presented of the different activities.

2.2.1 Capacity building in integrated land management (P2.1)

The activity P2.1 has two subactivities: a) on-farm testing and demonstration plots of chemical fertilizers with micronutrients, and b) capacity building of farmers in a broader sense.

On-farm testing and demonstration plots of chemical fertilizers with micronutrients (P2.1a)

Activity P2.1a is being carried out in a large number of collines. Since this needs to be further detailed for the time being, the province level is being presented (Figure 2.12).

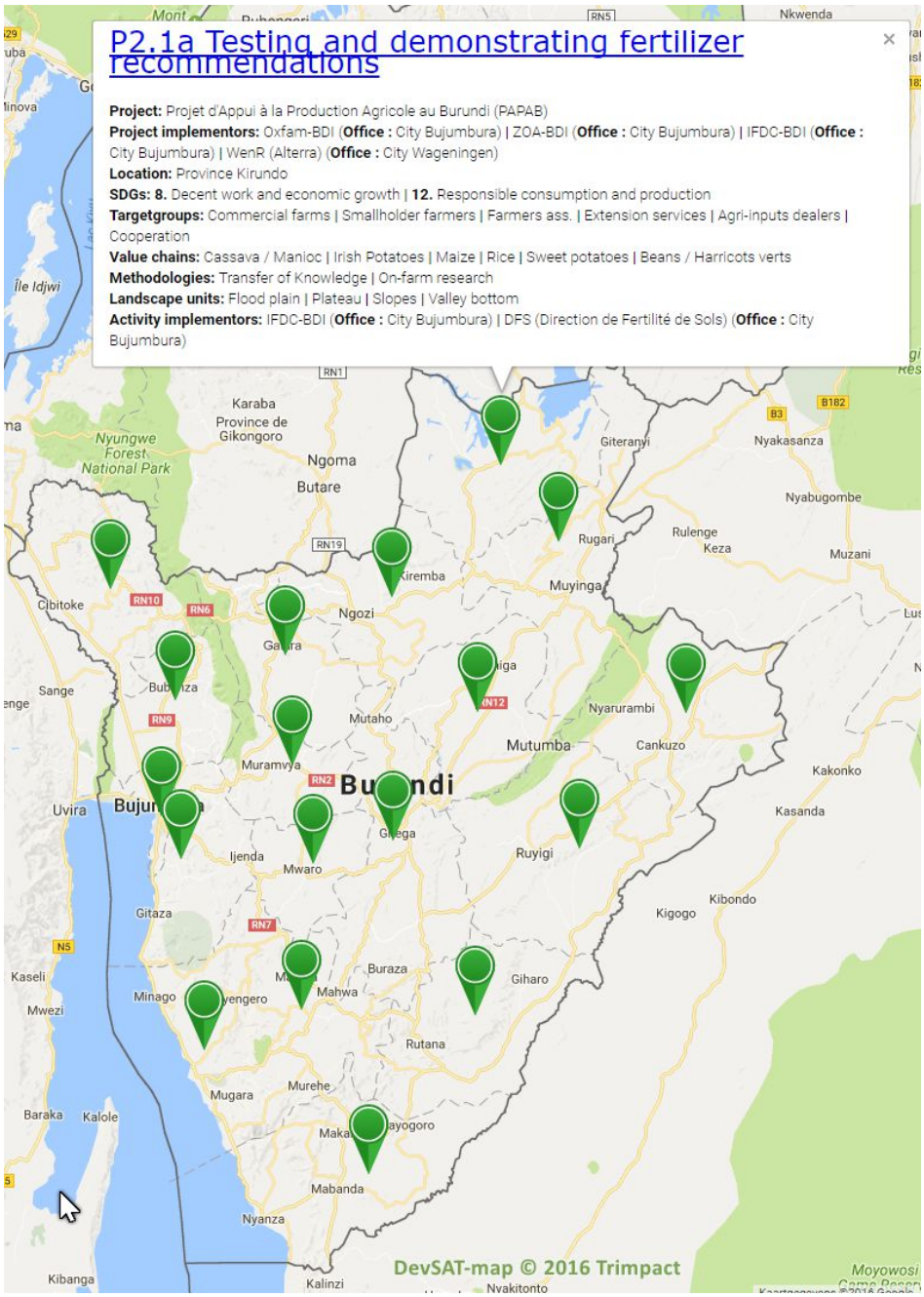


Figure 2.12. The information box and the locations of the activity testing and demonstrating chemical fertilizers.

Capacity building of farmers in a broader sense (P2.1b)

Activity 2.1b is being carried out in the different provinces as illustrated in Figure 2.13. Its main characteristics are listed in the information box in that figure. Since this activity is being executed by different organisations, three subactivities has been made in DevSAT: a = ZOA; b = Oxfam with ADISCO and OAP, and c = ZOA with RBU.

Figure 2.14 presents the SDGs being adressed by the activity P2.1b. As mentioned earlier, only the main SDGs are included at the moment since the SDG-targets have not been identified by PAPAB.

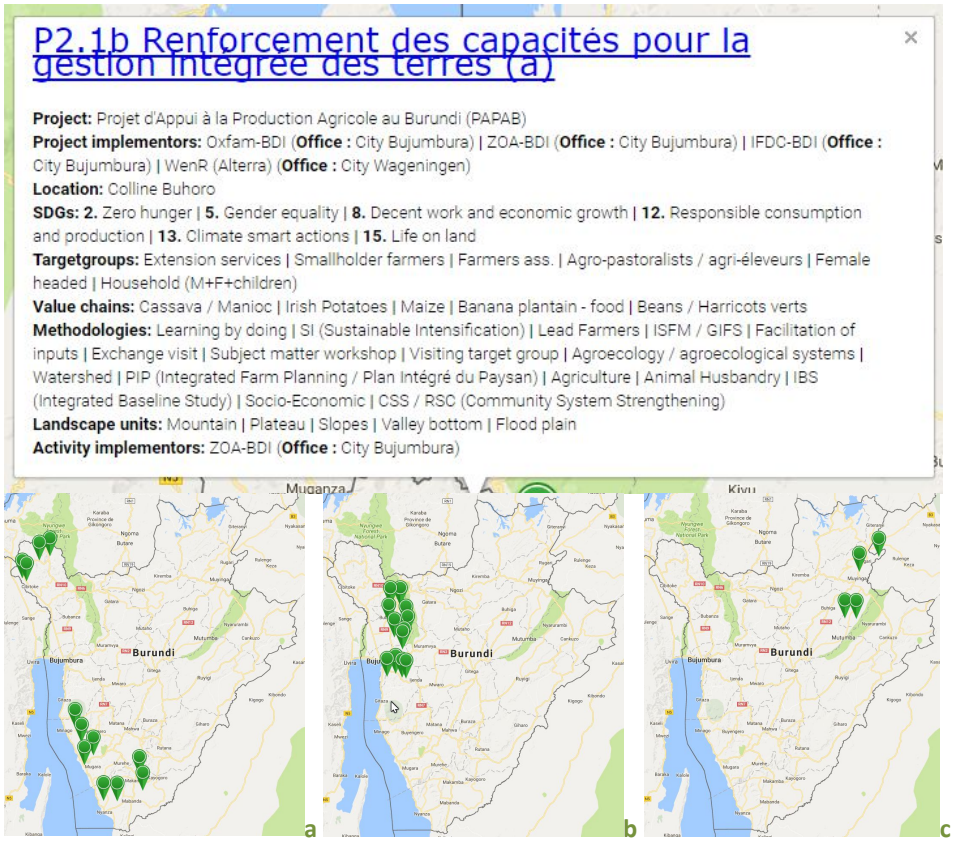


Figure 2.13. The information box and the locations of the activity Capacity building in integrated land manage-ment, executed by: a = ZOA; b = Oxfam with ADISCO and OAP, and c = ZOA with RBU.

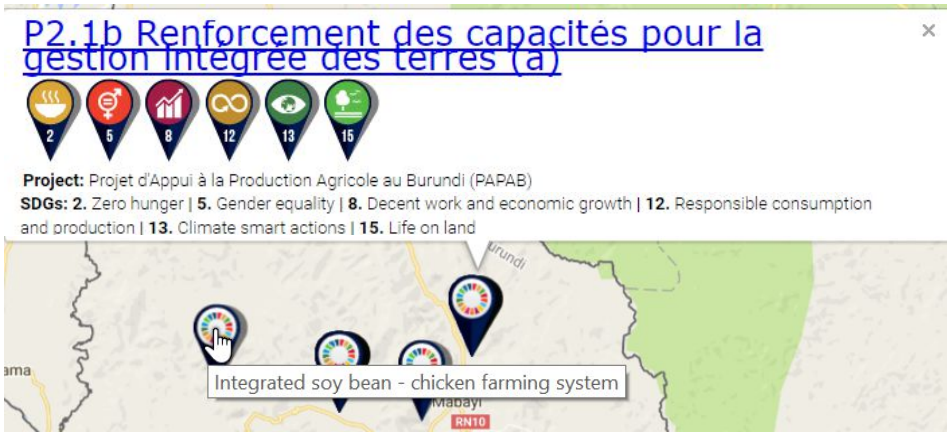


Figure 2.14. The location of the PAPAB colline Gitukura in Cibitoke indicating the SDGs addressed by this activity. Multi-color = multiple SDGs.

Activity P2.1b addresses also number of value chains. The main ones are listed in the box in Figure 2.13. It is noted that high value crops are not listed here, as they are of importance to the project, but the focus is manily on staple crops. Next year, a new activity will most probably start to make the link between the staple and high value crops (see Subsection 2.2.11), because an economic engine remains required to buy the inputs that will allow farmers to invest in their farm to be able to boost agricultural production.

Finally, this activity also uses a large number of methodologies in the socio-economic, agricultural, and research domains, as well as general ones related to transfer of knowledge (box in Figure 2.13). The multidisciplinary PIP approach is used for work with the farmers that integrates also a lot of the other methodologies. Finally, the watershed approach allows a more helicopter point of view that is also required for planning of anti-erosion measures and reforestration.

2.2.2 Organizing farmers into sustainable associations (P2.2)

This activity P2.2 is being carried out simultaneously with P2.1. Its characteristics are listed in the information box in Figure 2.15. The locations are the same as in P2.1b (Figure 2.13).

Figure 2.15. The information box and a location of the activity organizing farmers into associations.

2.2.3 Communication and advocacy improved agriculture (P2.3)

This activity P2.3 is planned to start a bit later when some results can be shared. Its characteristics are listed in the information box in Figure 2.16.

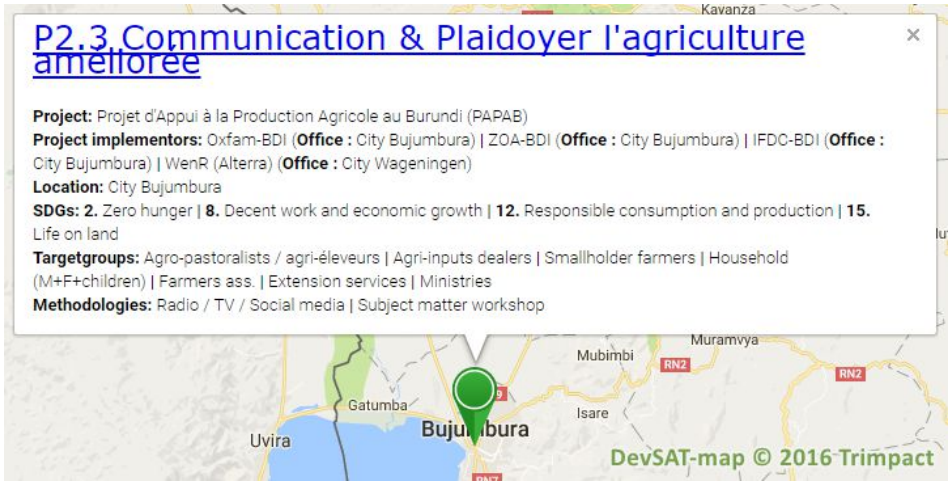


Figure 2.16. The information box and the location of the activity communication and advocacy improved agriculture.

2.2.4 Forming solidarity savings and credits groups (P2.4)

This activity P2.4 is being carried out simultaneously with P2.1 and P2.1. Its characteristics are listed in the information box in Figure 2.17. The locations are the same as in P2.1b (Figure 2.13).

Figure 2.17. The information box and the location of the activity P2.4.

2.2.5 Improvement of conservation and stockage & improvement of sales (P2.5)

Improvement of conservation and stockage (P2.5a)

This activity P2.5a is being carried out simultaneously with P2.1, P2.2 and P2.4. Its characteristics are listed in the information box in Figure 2.18. The locations are the same as in P2.1 (Figure 2.13).

Figure 2.18. The information box and the location of the activity P2.5a.

Improvement of sales by farmers (P2.5b)

This activity P2.5b is being carried out simultaneously with P2.1, P2.1, P2.4 and P2.5a. Its characteristics are listed in the information box in Figure 2.19.

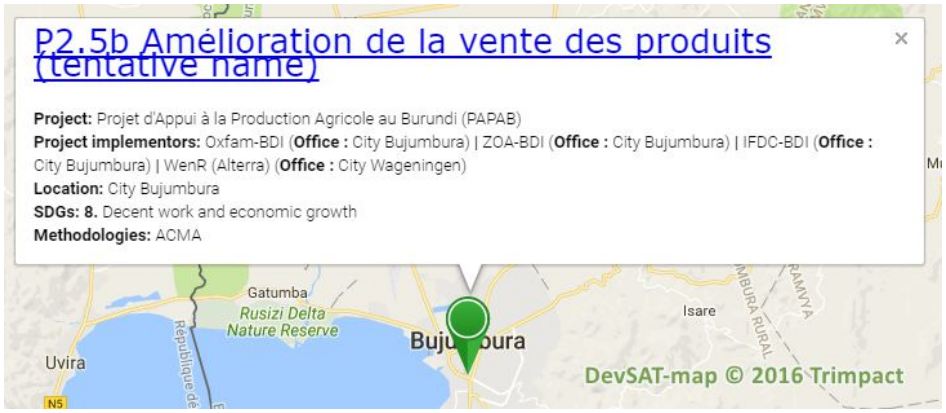


Figure 2.19. The information box and the location of the activity P2.5a.

2.2.6 Supporting the soil laboratory (P2.6)

To optimize the use of fertilizer, site-specific fertilizers recommendations together with other techniques (Subsection 2.2.7) may provide an option to increase resources use efficiencies. For that matter a more cost-effective soil sampling method is being introduced that includes also the introduction of new ways of doing soil analyses. The main characteristics of this activity are listed in the box in Figure 2.20.

Figure 2.20. Location and main characteristics of supporting the soil chemical laboratory activity.

2.2.7 Improvement of site-specific recommendations (P2.7)

This activity tentatively located in two provinces will support ISABU in developing site-specific recommendations. This activity will use the results of the soil laboratory (Subsection 2.2.6). The main characteristic of this activity are listed in the box in Figure 2.21. This work builds on the results of e.g. the closed WOTRO/ARF project in Makamba (not yet included in DevSAT; being executed by ZOA and WenR in the period 2014-2016) and IFDC's CATALIST projects (also not yet included). A new project proposal has been submitted by ZOA to WOTRO-ARF to continue research on specific technologies, such as conservation agriculture (not yet in DevSAT).

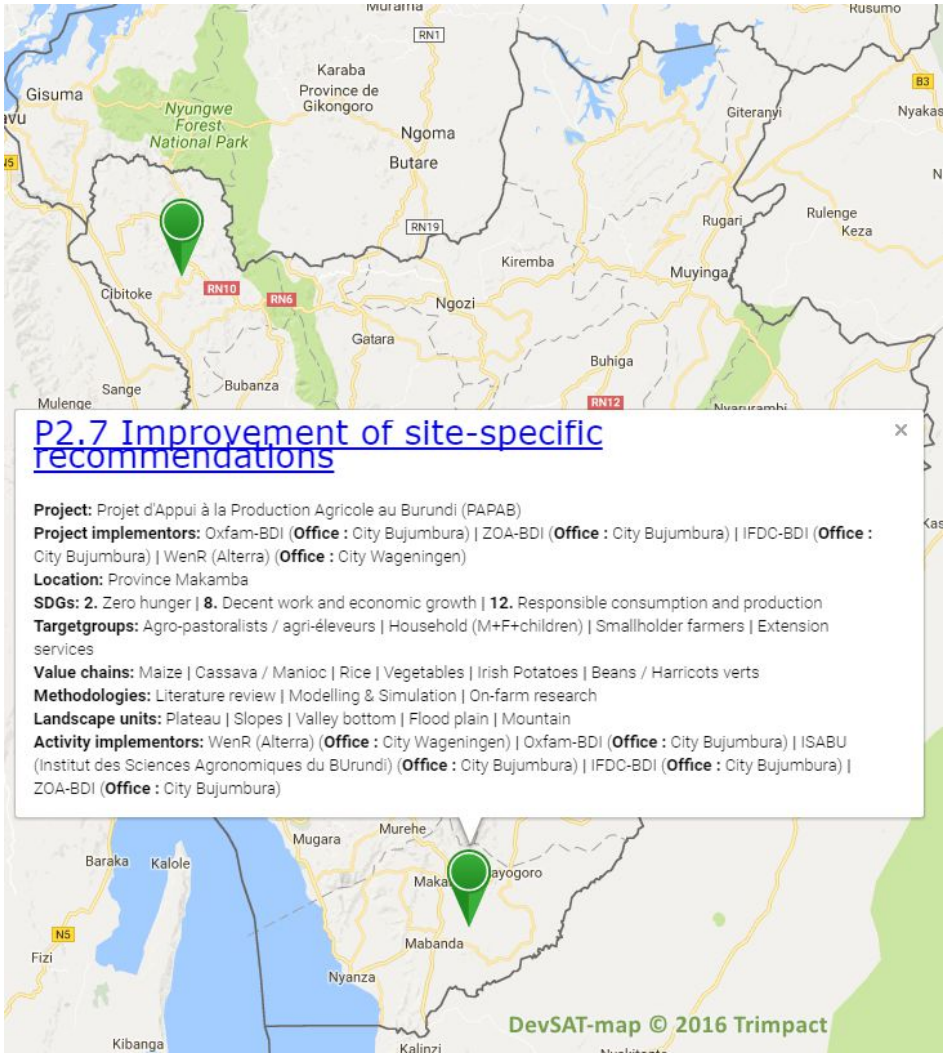


Figure 2.21. Locations and main characteristics of site-specific fertilizer recommendation activity.

2.2.8 Understanding social barriers in CSA and testing CSA measures (P2.8)

In the framework of the SCAD project (2013-2016) two young scientists were hired to work on social barriers in Climate Smart Agriculture (CSA), and testing of some CSA-techniques applicable by small-holder farmers. This work is now being continued within PAPAB. The main characteristics of this activity are listed in the box in Figure 2.22.

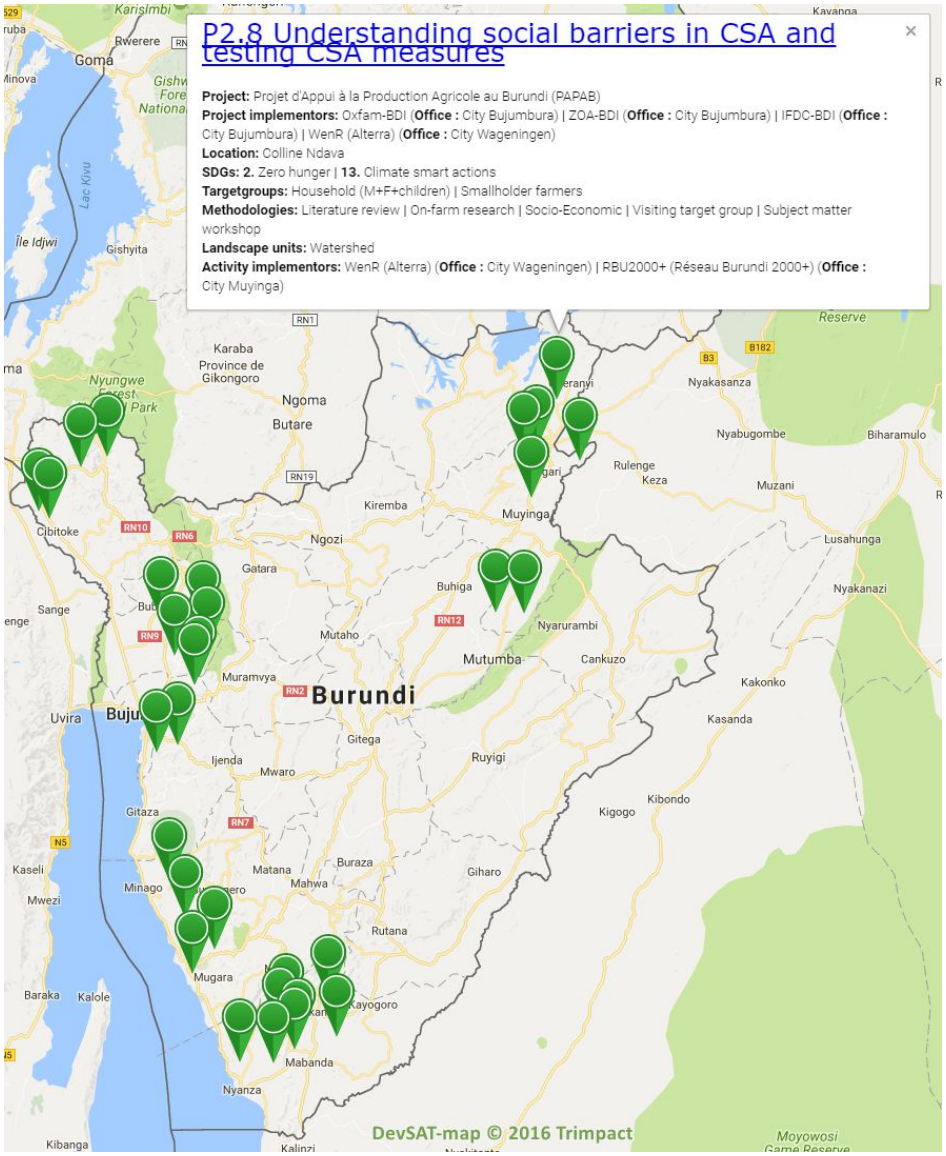


Figure 2.22. Locations and main characteristics of site-specific fertilizer recommendation activity.

2.2.9 Alignment & synergy of projects to increase impact – pilot (P2.9)

This activity is being carried out with focus on the province Cibitoke. The main characteristic of this activity are listed in the box in Figure 2.23. Note that this activity has a complete different set of target groups then the other PAPAB activities. For more details on the process of contacting various stakeholders and working with the first group of users, reference is made to van Duivenbooden (2016b).

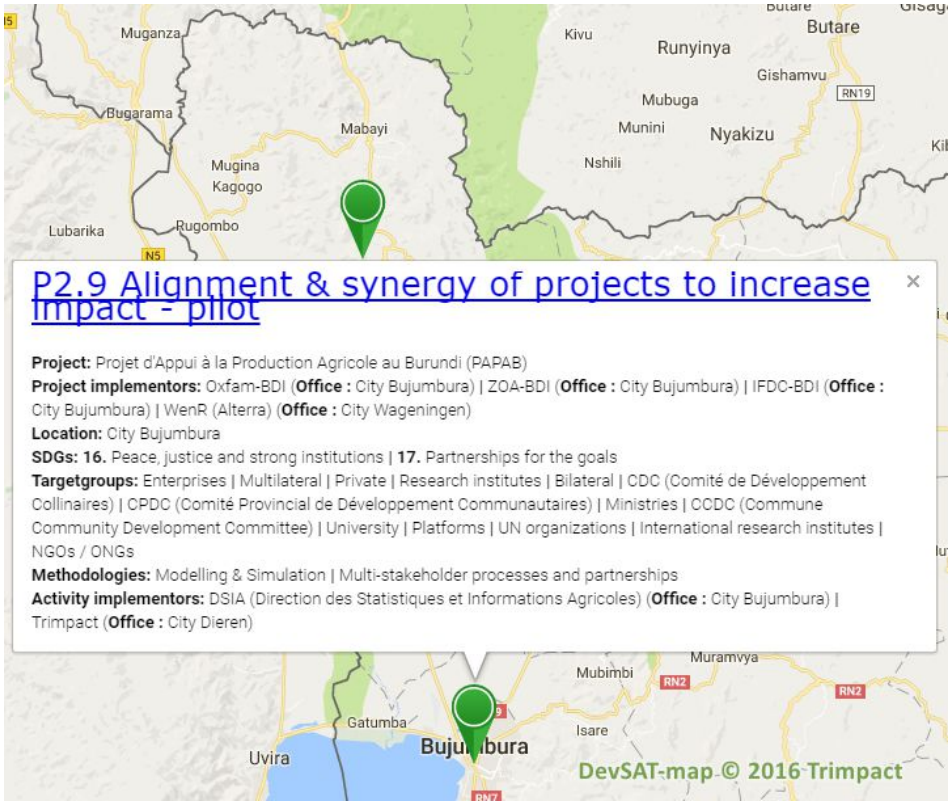
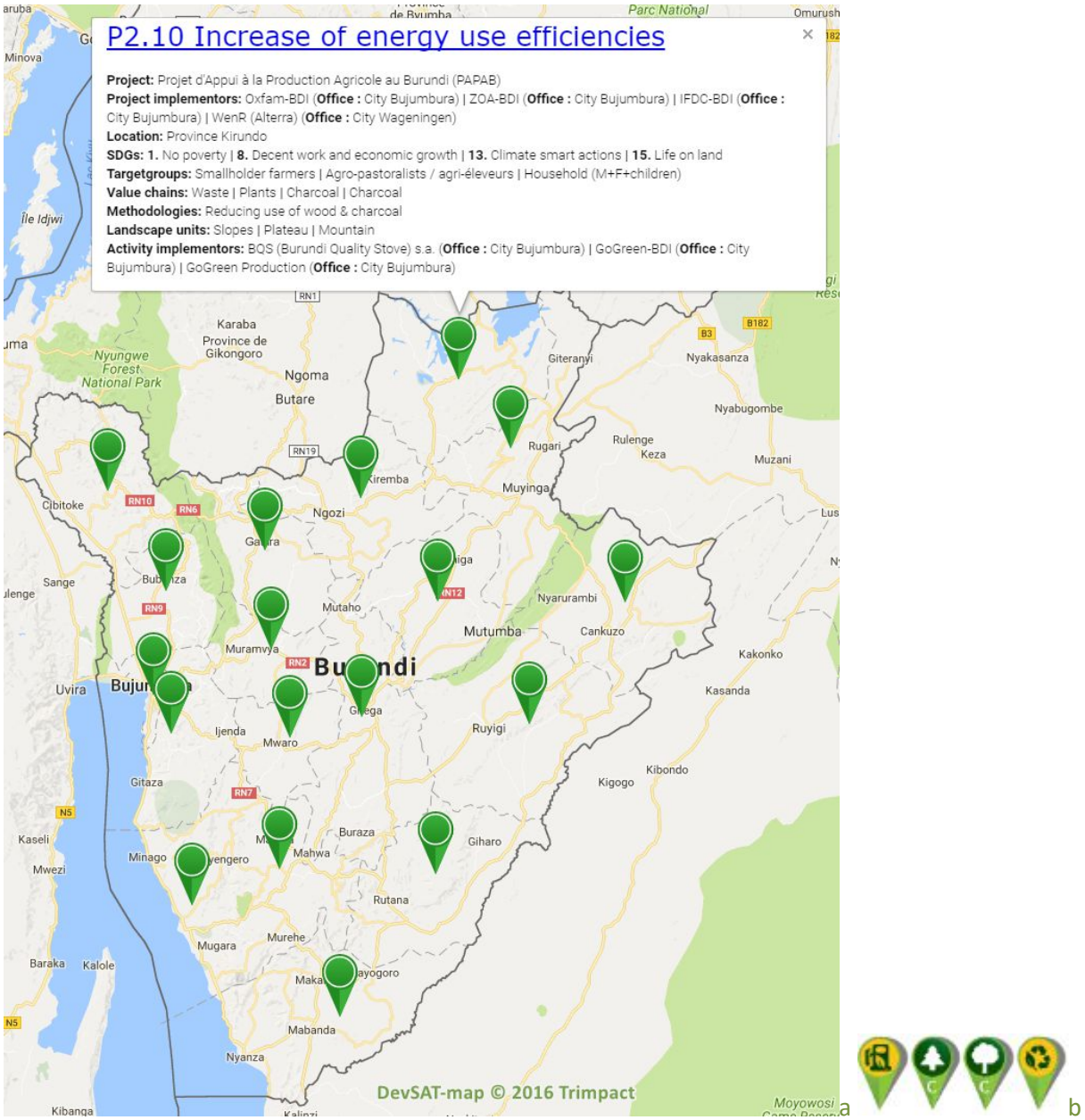


Figure 2.23. Locations and main characteristics of Alignment & synergy of projects activity.

2.2.10 Increase of energy use efficiencies (P2.10)

This planned activity tentatively located in all provinces aims to reduce charcoal use by introduction of Fuel-Efficient Stoves (FES) to a larger part of the inhabitants, and of the households that use chemical fertilizer (part of the package). This activity could be executed in collaboration with COPED that has already prepared a project proposal in 2015 (not yet funded).

In this way, a significant reduction in CO2 can be realized (SDG13), savings be made to reduce poverty (SDG1), increase of alternative employment (SDG8), and more land can be kept conserved (SDG15). The other main characteristic of this activity are listed in the box in Figure 2.24.



a b

Figure 2.24. a) Locations and main characteristics of the activity to reduce charcoal use and increase protection of natural vegetation, and b) the symbols of the value chains addressed: biofuels, natural forest, planted trees, biofuel from organic material waste.

2.2.11 Supporting enterprises and co-operations in increasing production and sustainability (P2.11)

This proposed activity tentatively located in six provinces will support enterprises exporting valuable crops such as coffee, patchouli and tea in increasing their production in food crops since only part of the land is being cultivated with high value crops. Working on Stevia is to be further examined, pending distribution of the seedlings among farmers (due early 2017). This allows also to increase sustainability issues. The main characteristic of this activity are listed in the box in Figure 2.25. A link with the FDOV-funded Patchouli project in Nyanza Lac, Makamba Province (not yet included in DevSAT) is also a possible link, especially as they have also included the PIP approach as one of their methodologies, and CSA-cropping techniques as a deliverable.

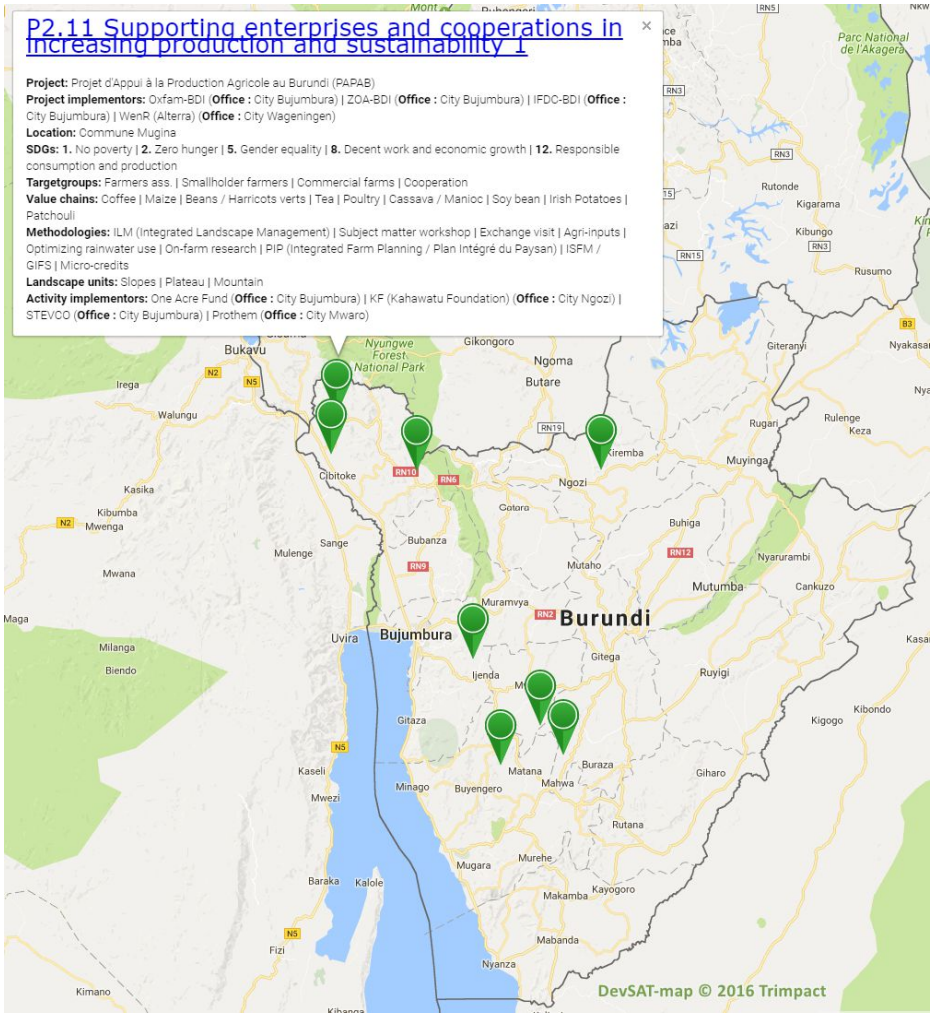


Figure 2.25. Locations and main characteristics of the activity to increase food production and sustainability in collaboration with enterprises.

2.3 Summary overview

Depending on the presentation to be given, a summary figure with the main characteristic for the entire project can be created with DevSAT. Figure 2.26 shows this overview, and demonstrates that an integrated approach comes with details and good planning of activities in collaboration with other parties to avoid duplication of efforts. Because the overview is at project level each item has the value one.

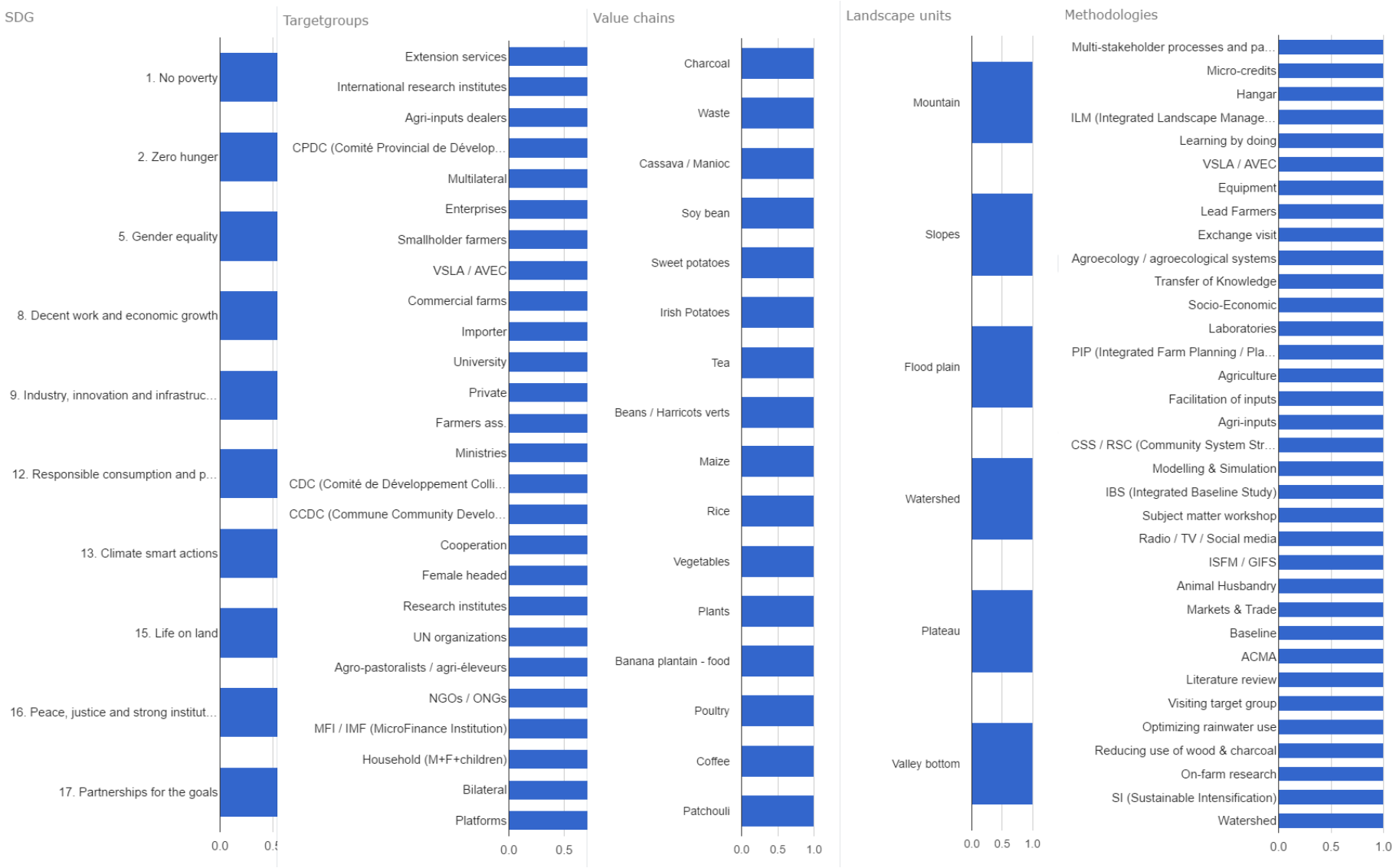


Figure 2.25. An overview of the main five characteristics of the PAPAB project, from left to right: SDGs, Target groups, Value chains, Target landscape unit and Methodologies by one or more activities.

3 Linking PAPAB to other projects

3.1 Introduction

Before the linking of PAPAB to other projects can be discussed, it should be noted that the linking is based on a restricted number of projects. Not all organizations who have received an invitation have made use of it. Others have started, but have not yet completed all details in their project information form. We trust this wil be done early next year when the DevSAT dashboards for making maps and tables will become available mid-January. This implies that the text in the information boxes of these projects presented in this chapter will be elaborated.

In total 54 projects are present in DevSAT (16 December; Table 3.1) from 27 organisations (out of 34 invited) who filled in the information themselves or shared the information to have it included by Trimpact. On average, a project has 2.3 activities. The activities are mapped for each of their five main characteristics in Figure 3.1 and in more detail (full page maps) in Annex 2. The number of links of the main characteristics provides an idea about the level of detail of an activity description. For instance, on average each activity addresses 2.2 SDGs and 2.9 different target groups while using 2.4 different methodologies. Since also non-agricultural projects are included, it is logic that value chain and target land-scape unit have much lower values.

Although the maps are here presented as static information, the real use lies in the possibilities to gain information from these figures when they are search for online (as presented in Chapter 2 for the PAPAB project) through the dashboards. These dashboards (available mid-January) with filters that can be easily adapted and planned features connect easily other projects by mail will increase the interactive capacity of DevSAT. Regarding functionality and lay-out, DevSAT is continuously being improved. Some features (such as spidergraphs to indicate multiple projects at one specific location0 are now being tested and will be in the next release planned for end-December. It is only when people have easy access and can easily use DevSAT, it becomes a daily tool such as MS-WORD etc. to serach for linking, alignment and synergy.

Table 3.1. Overview of number of projects and their activities in Burundi with number of main characteristics in DevSAT (at 20161119).

Included	number	Main activity characteristic	Number of links	#/activity
Project	54	SDGs	279	2.2
Activitity	126	Target group	360	2.9
		Value chain	69	0.5
		Target land scape unit	119	0.9
		Methodologies	304	2.4

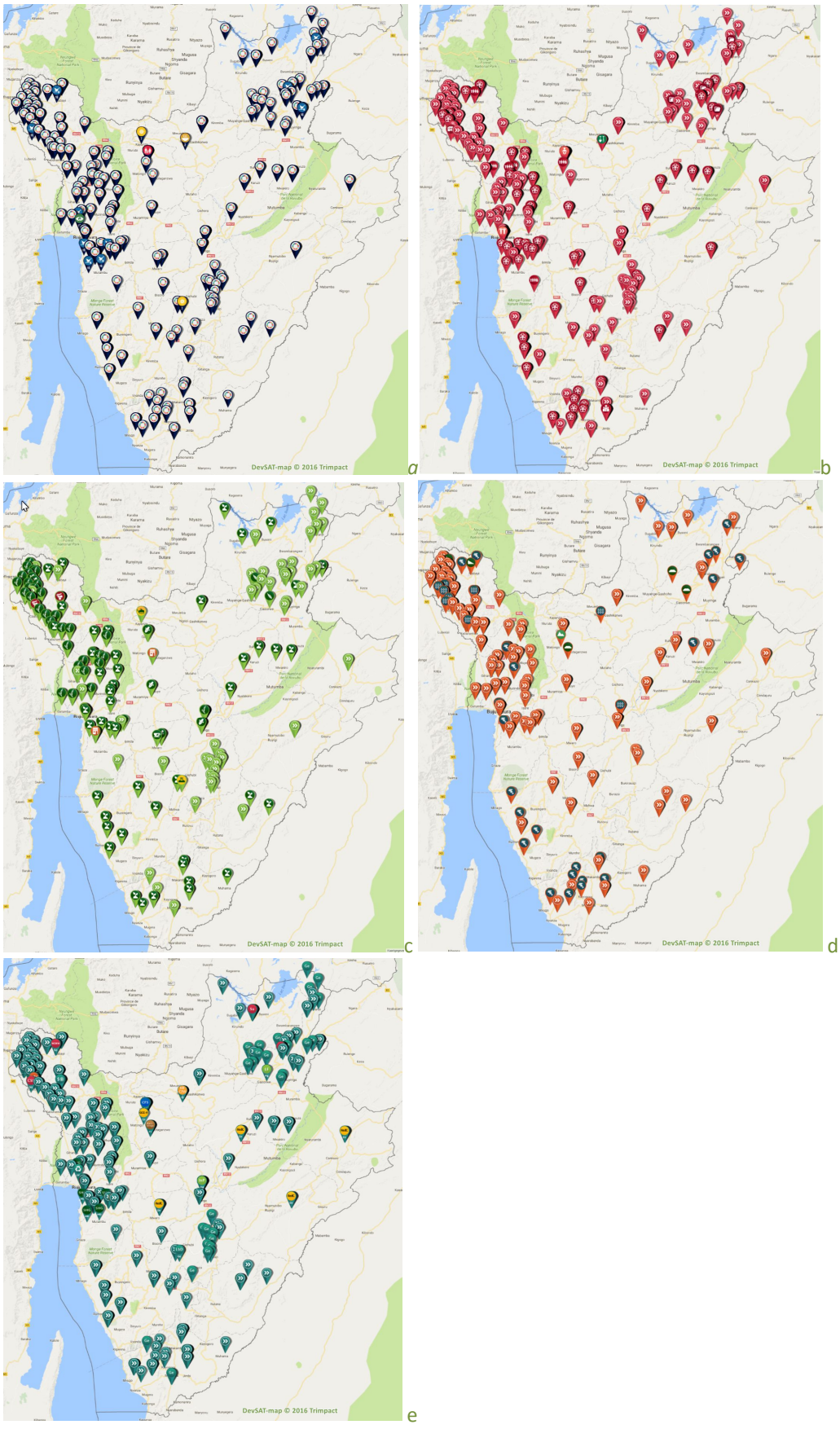


Figure 3.1. Locations of the activities included in DevSAT with focus on a) SDGs, b) target groups, c) value chain, d) target landscape unit, e) methodologies and f) deliverables (each map in presented on one page in Annex 2).

3.2 Similarity of other projects

As explained before and illustrated in Figure 1.3b, collaboration between projects is expected to be the easiest when the projects have certain aspects in common. DevSAT has the feature to calculate automatically the similarity between projects using the following five main characteristics: SDG, Target Group, Target Landscape Unit, Value Chain and Methodology. This is called the Similarity Index (SI).

To calculate SI, first the total of 'tags' of all five characteristics of the reference project (i.e. the one to which others are compared to) is counted. Next, DevSAT counts for all other projects the exact matches of these tags, referred to as 'overlaps'. SI is then the ratio of overlaps/tags; ranging thus from 0 to 1. SI exceeding 0.66 is considered a good similarity, SI between 0.33 and 0.66 as medium, and inferior to 0.33 as poor.

The similarity index of projects can be mapped, as illustrated for the projects compared to PAPAB in Figure 3.2. Table 3.2 shows in detail where the similarities exist. The reason why some projects have a low SI compared to PAPAB is partly explained by the high level of detail in which PAPAB is described. If we take another project (i.e. Our Valuable children), and compare that, we get a complete different map (Figure 3.3).

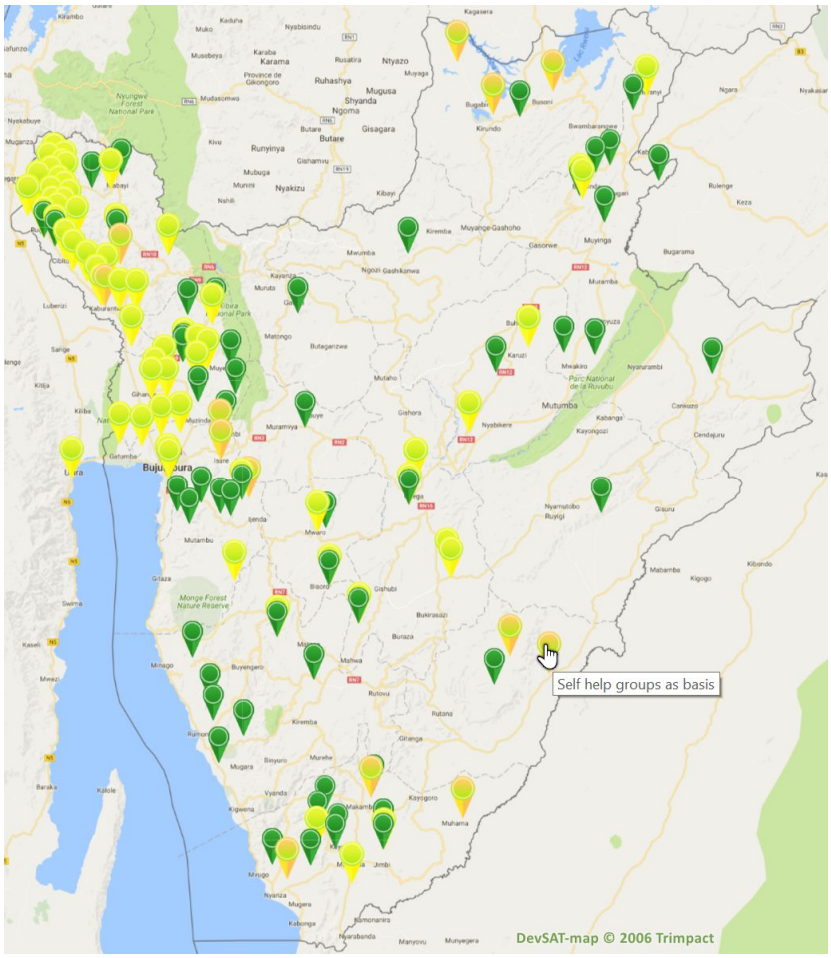


Figure 3.2. Locations of the activities of the reference project PAPAB (dark green markers) and of the activities of projects with a high (light green), medium (orange) and low similarity (yellow).

Table 3.2. Projects similar to PAPAB in terms of SDGs, targetgroup, land scape unit, methodolology and value chains in BDI and DRC (2bV&C = to be verified and completed).

Project	Similarity	#sdg	Sdgs	#vc	Vcs	#meth	Meths	#tg	Tgs	#lu	Lus
Building Bridges in Burundi (2bV&C by HaC)	Medium	5	1 2 5 8 16	5	Maize | Cassava / Manioc | Vegetables | Beans / Harricots verts | Banana plantain - food	6	Multi-stakeholder processes and partnerships | Subject matter workshop | Learning by doing | CSS / RSC (Community System Strengthening) | VSLA / AVEC | Exchange visit	4	Household (M+F+children) | Smallholder farmers | Agro-pastoralists / agri-éleveurs | Female headed	4	Plateau | Slopes | Valley bottom | Flood plain
Solidarité Communautaire d'AutoDéveloppement (SCAD) / Fanning the Spark	Poor	6	1 2 5 8 15 16	5	Maize | Cassava / Manioc | Vegetables | Coffee | Poultry	5	Learning by doing | CSS / RSC (Community System Strengthening) | VSLA / AVEC | PIP (Integrated Farm Planning / Plan Intégré du Paysan) | Watershed	3	Household (M+F+children) | Smallholder farmers | Female headed	3	Plateau | Slopes | Valley bottom
Improving food security in Karusi province	Poor	5	1 2 8 13 15	4	Maize | Cassava / Manioc | Beans / Harricots verts | Banana plantain - food	5	Visiting target group | Subject matter workshop | VSLA / AVEC | PIP (Integrated Farm Planning / Plan Intégré du Paysan) | Facilitation of inputs	3	Household (M+F+children) | Smallholder farmers | Farmers ass.	4	Plateau | Slopes | Valley bottom | Mountain
The Consortium for Improving Agriculture-based Livelihoods in Central Africa (CIALCA) (2bV&C by IITA)	Poor	8	1 2 5 8 12 13 15 17	4	Maize | Cassava / Manioc | Vegetables | Beans / Harricots verts	4	Multi-stakeholder processes and partnerships | Subject matter workshop | SI (Sustainable Intensification) | Markets & Trade	2	Smallholder farmers | Female headed	2	Plateau | Slopes
Programme National pour la Sécurité Alimentaire et le Développement Rural de l'Imbo et du Moso (PNSADR - IM)	Poor	4	1 2 8 9	2	Rice | Vegetables	5	Learning by doing | SI (Sustainable Intensification) | ISFM / GIFS | Agri-inputs | Markets & Trade	6	Household (M+F+children) | Smallholder farmers | Agro-pastoralists / agri-éleveurs | Farmers ass. | Agri-inputs dealers | Cooperation	2	Valley bottom | Flood plain
Améliorer les moyens de subsistance dans la province Sud-Kivu, RD Congo avec une approche intégrée / Amkeni Tufanye Kazi (ATK)	Poor	8	1 2 5 8 12 13 15 16	4	Maize | Cassava / Manioc | Beans / Harricots verts | Sweet potatoes	2	PIP (Integrated Farm Planning / Plan Intégré du Paysan) | Reducing use of wood & charcoal	2	Household (M+F+children) | Smallholder farmers	3	Slopes | Valley bottom | Flood plain
Smallholder tea production, processing and marketing	Poor	6	1 2 8 9 13 15	5	Maize | Cassava / Manioc | Beans / Harricots verts | Sweet potatoes | Tea	0		3	Household (M+F+children) | Smallholder farmers | Farmers ass.	2	Plateau | Slopes
Bring back soy beans to Burundi (2bV by HaC)	Poor	5	2 8 12 13 15	3	Maize | Cassava / Manioc | Soy bean	4	On-farm research | CSS / RSC (Community System Strengthening) | PIP (Integrated Farm Planning / Plan Intégré du Paysan) | Markets & Trade	4	Household (M+F+children) | Smallholder farmers | Extension services | Farmers ass.	0	
Projet pour le Développement des Filières (PRODEFI I)	Poor	3	1 2 8	2	Maize | Rice	2	Learning by doing | CSS / RSC (Community System Strengthening)	3	Smallholder farmers | Farmers ass. | Cooperation	5	Plateau | Slopes | Valley bottom | Flood plain | Mountain
AgriBusiness Creation (ABC) (2bV&C by Spark)	Poor	3	1 8 17	1	Banana plantain - food	3	Subject matter workshop | Learning by doing | PIP (Integrated Farm Planning / Plan Intégré du Paysan)	4	Household (M+F+children) | Smallholder farmers | Farmers ass. | Cooperation	3	Plateau | Flood plain | Mountain

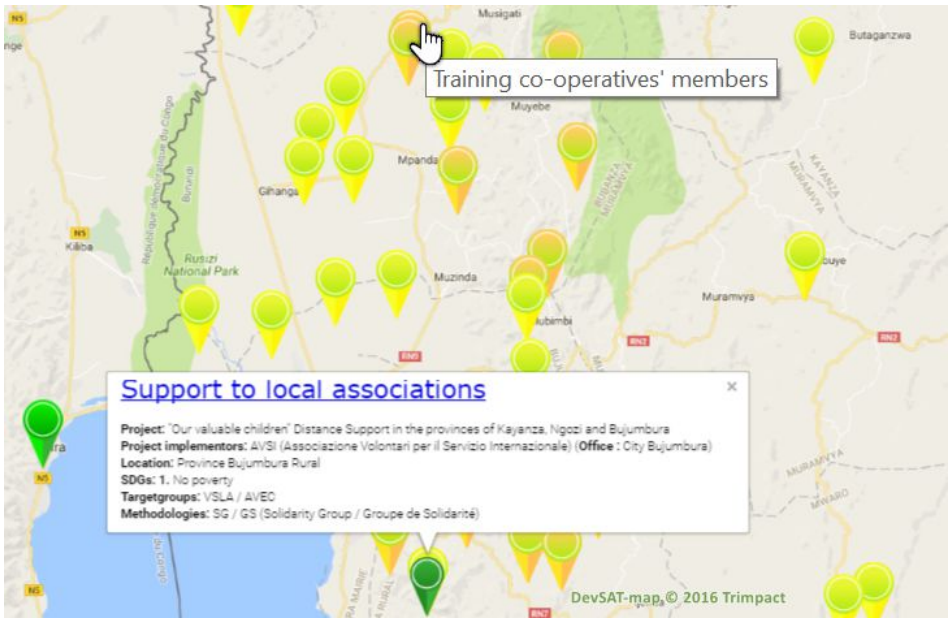


Figure 3.3. Locations of the activities of the reference project *Our valuable children* (dark green markers) and of the activities of projects with a high (light green), medium (orange) and low similarity (yellow).

Another way to obtain information regarding the similarities is using the information boxes, as illustrated in Figure 3.4 that work on the same SDG with the same target group.

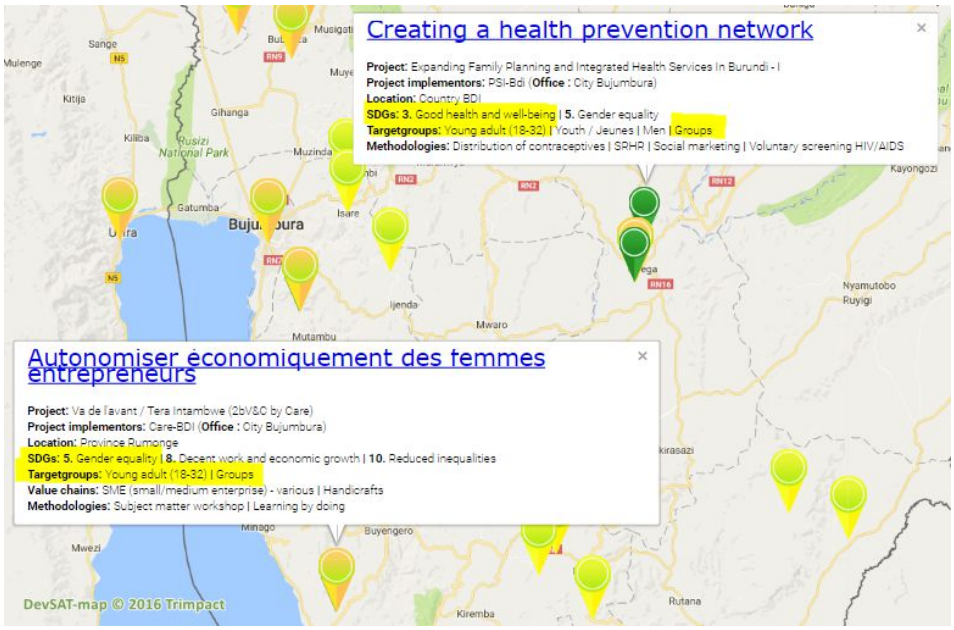


Figure 3.4. Locations of the activities of the reference project *Expanding Family Planning*, and of activities of similar projects with a medium (orange markers) and low (yellow markers) similarity. Yellow highlighted lines indicate the common items.

With the focus of this pilot phase being Cibitoke, we will further zoom in for similarities of projects in that province. The 20 projects with 42 activities (including those in the pipeline) that are currently included in DevSAT are listed in Table 3.3. Figure 3.5 shows the results of the analysis of common characteristics of the projects in Cibitoke. For instance, Figure 3.5a shows that regarding SDGs, with

on the X-axes the number of projects, Zero hunger (SDG2) is the most frequently addressed, followed by Decent work and economic growth (SDG8). This information provides the user of DevSAT a preliminary overview where to look for possible linkages in terms of these characteristics. In the following subsections, we describe the preliminary linking of projects in some detail.

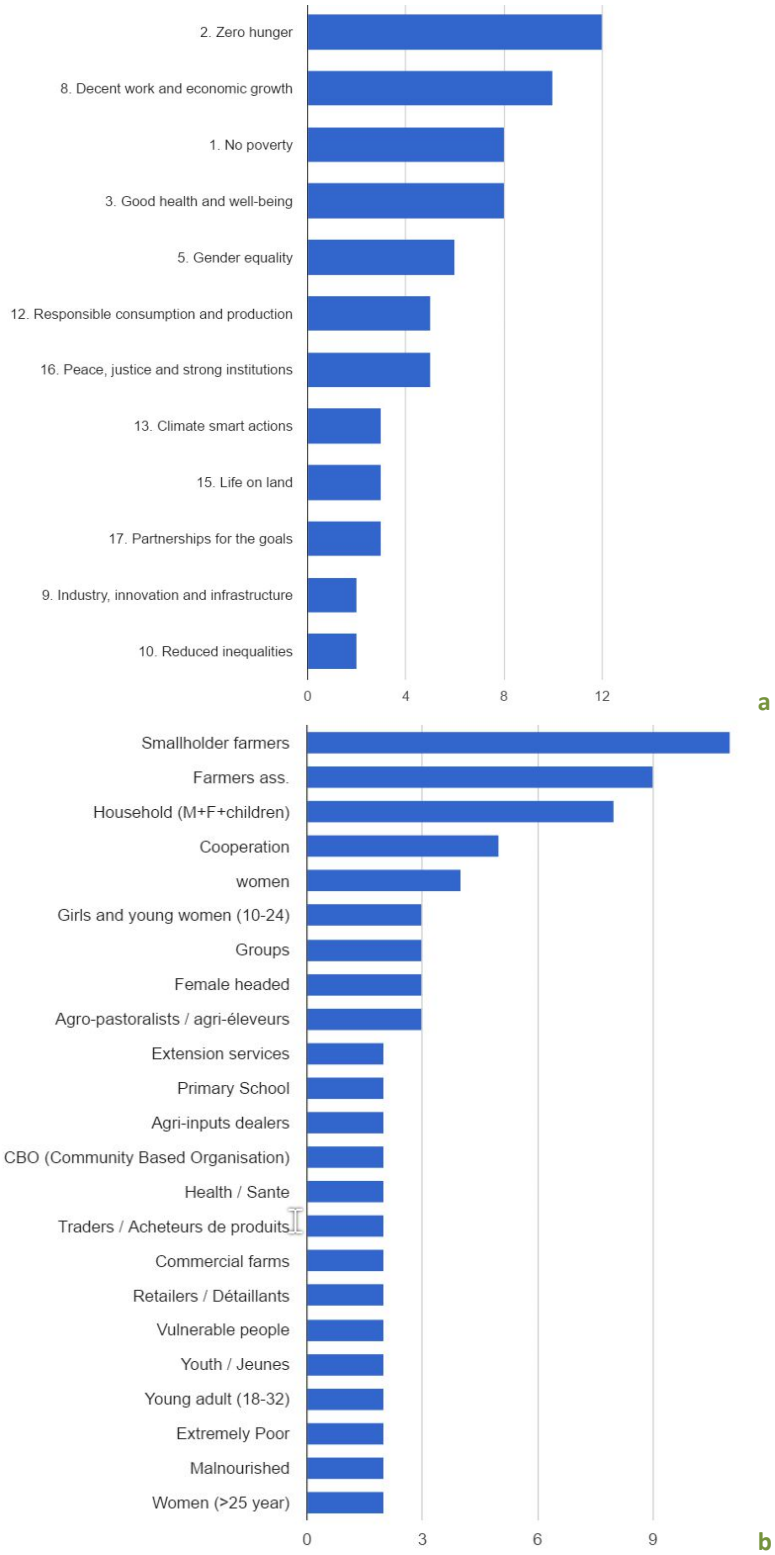


Figure 3.5a,b. *Main characteristics of similar projects to PAPAB in province Cibitoke in terms of a) SDGs and b) target group.*

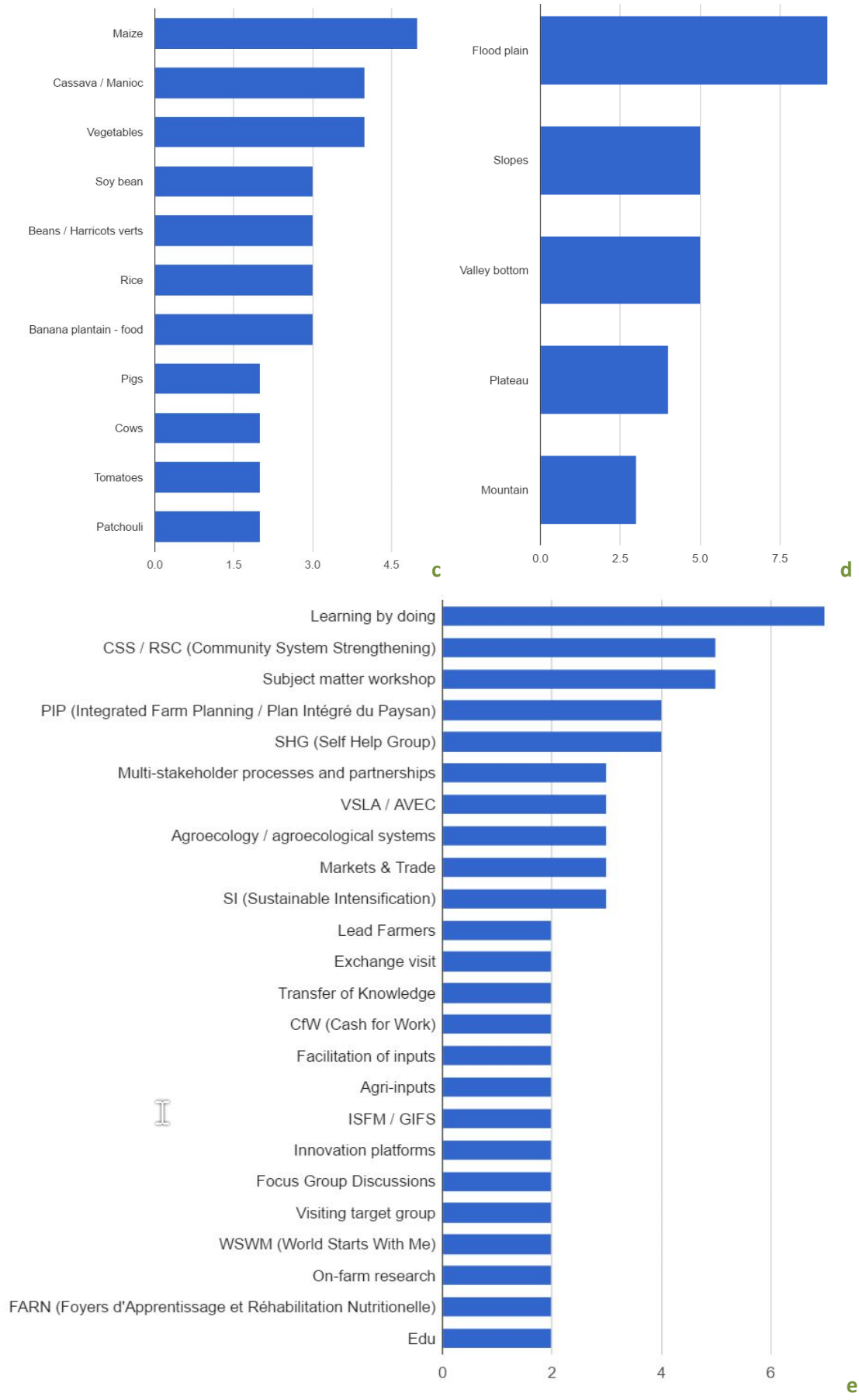


Figure 3.5c-e. *Main characteristics of similar projects to PAPAB in province Cibitoke in terms of c) value chains, d) land scape unit, and e) methodology.*

Table 3.3. Current and future projects and their activities in Cibitoke included in DevSAT; 2bV&C = to be verified and completed.

Project	Activity
AgriBusiness Creation (ABC) (2bV&C by Spark)	Increasing White sorghum production for the beer and developing the value chain
AgriBusiness Creation (ABC) (2bV&C by Spark)	Increasing honey production and developing the value chain (2bV&C by Spark)
AgriBusiness Creation (ABC) (2bV&C by Spark)	Renovating fruits value chain (Fresh fruits and vegetables)
AgriBusiness Creation (ABC) (2bV&C by Spark)	Training co-operatives' members
Bring back soy beans to Burundi (2bV by HaC)	Integrated soybean-based farming systems
Building Bridges in Burundi (2bV&C by HaC)	Self help groups as basis
Expanding Family Planning and Integrated Health Services In Burundi - II [2bV&C by PSI]	Creating network of health facilities - phase 2
Improving the Health and Wellbeing of Children Under Five	Development of 'Care Groups' of volunteer mothers to make twice-monthly home visits to promote specific healthy behaviors
Improving the Health and Wellbeing of Children Under Five	Establishment of Savings and Internal Lending Communities (SILC) groups
Improving the Health and Wellbeing of Children Under Five	Implementing Community Case Management (CCM) of diarrhea, pneumonia and malaria by Community Health Workers
Improving the living conditions of children	Improving education
Joint Program for adolescents and youth in Burundi (2bV&C by Care)	Informer les jeunes et adolescents sur la SSR
Maisonettes	Construction des maisonnettes
Programme National pour la Sécurité Alimentaire et le Développement Rural de l'Imbo et du Moso (PNSADR - IM)	SC1.1 Aménagement hydroagricoles - IMBO
Programme National pour la Sécurité Alimentaire et le Développement Rural de l'Imbo et du Moso (PNSADR - IM)	SC1.2 Opening up agricultural production zones / Désenclavement des zones de production agricole - IMBO
Programme National pour la Sécurité Alimentaire et le Développement Rural de l'Imbo et du Moso (PNSADR - IM)	SC2.1 Rice value chain development / Développement de la filière riz - IMBO
Programme National pour la Sécurité Alimentaire et le Développement Rural de l'Imbo et du Moso (PNSADR - IM)	SC2.2 and SC2.3 Dairy + Porc value chain development / Développement de la filière latière et du porc - IMBO
Projet Renforcement de la Sécurité Locale (RSL)	Formation
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P1.1 Amélioration des opérations de distribution des engrais
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.10 Increase of energy use efficiencies
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.11 Supporting enterprises and cooperations in increasing production and sustainability 1
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.1a Testing and demonstrating fertilizer recommendations
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.1b Renforcement des capacités pour la gestion intégrée des terres (a)
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.2 Organisation et structuration paysanne en associations (a)
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.4 Formation des groupes solidaires d'Epargne et Crédit (a)
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.5a Amélioration de la conservation et stockage (a)
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.7 Improvement of site-specific recommendations
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.8 Understanding social barriers in CSA and testing CSA measures
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.9 Alignment & synergy of projects to increase impact - pilot
Projet pour le Développement des Filières (PRODEFI I)	Amélioration des connaissances techniques séchage-stockage Maïs
Projet pour le Développement des Filières (PRODEFI I)	Amélioration des connaissances techniques séchage-stockage Riz
Promoting Human Security in Ruzizi Valley	food security
Promoting Human Security in Ruzizi Valley	social cohesion - peace committees
Protracted Crisis Call	seed center
Protracted Crisis Call	social cohesion - peace committees
Respect me / Nyubahiriza (ARC project 2bV&C by Oxfam)	Addressing root causes
Rusake - Organic value chain (2bV&C by Rugofarm)	Integrated soy bean - chicken farming system
Réhabilitation nutritionnelle et de promotion du changement du comportement en matière alimentaire et sanitaire	Teaching mothers how to cook high quality foods
Supporting smallholders farmers to grow food crops	Labour des champs
Supporting smallholders farmers to grow food crops	Sensibilisation des fermiers à ouvrir des comptes à COPEC CIBITOKE
The Consortium for Improving Agriculture-based Livelihoods in Central Africa (CIALCA) (2bV&C by IITA)	Creating productive and resilient farming systems
Va de l'avant / Tera Intambwe (2bV&C by Care)	Autonomiser économiquement des femmes entrepreneurs

3.2.1 SDGs

Figure 3.6a shows that a large number of projects (including PAPAB) addresses multiple SDGs. The similar projects are listed in Table 3.2. Similarity can also be analysed and mapped as a function of the requirements of the individual user or during a meeting with various stakeholders.

For instance, if we want to have the projects in Cibitoke that address SDG5 (Gender equality) only 10 activity locations remain (of which 4 are PAPAB activities).If we then want to have a look what target groups the other projects focus on, we map that characteristic (Figure 3.6b). This provides us insight in a potential link with the highlighted project on the basis of the common SDG5, and a subset of the same target groups (households, female-headed households, smallholders farmers, agropastoralists). A further analysis on other main project characteristics can of course be made, but this as this depends on the requirements of the stakeholders we refrain from doing that. For now, the project Building Bridges (funded by EKN) is to start early 2017 seems thus a good candidate for collaboration.

Another observation is that most of the projects in Cibitoke as in the left side of the province, mainly thus in the flood plain, and also in the valley bottoms towards the right (Figure 3.6).

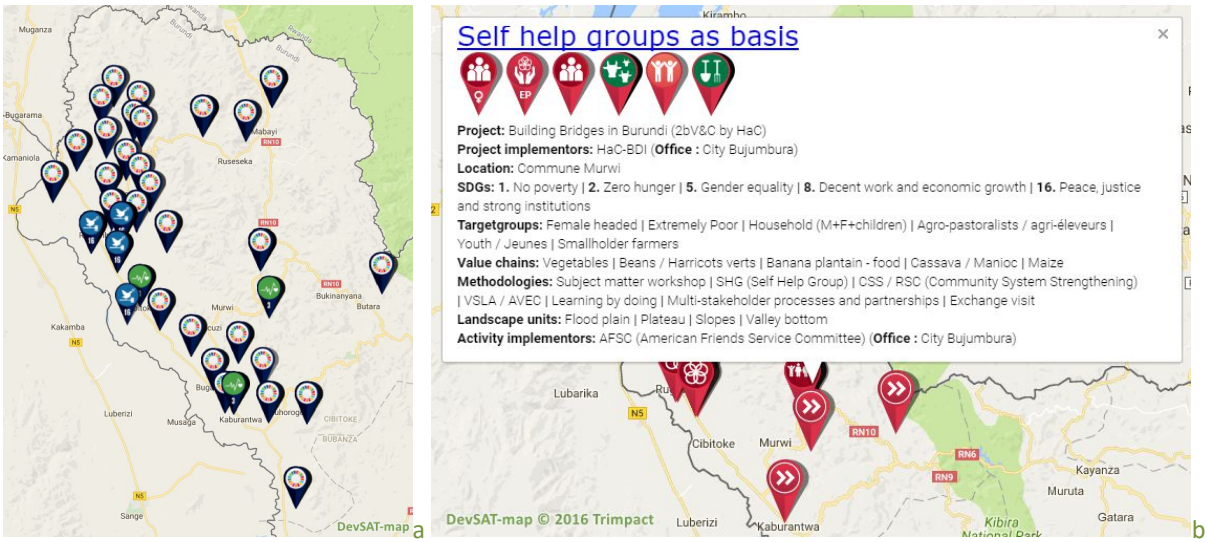


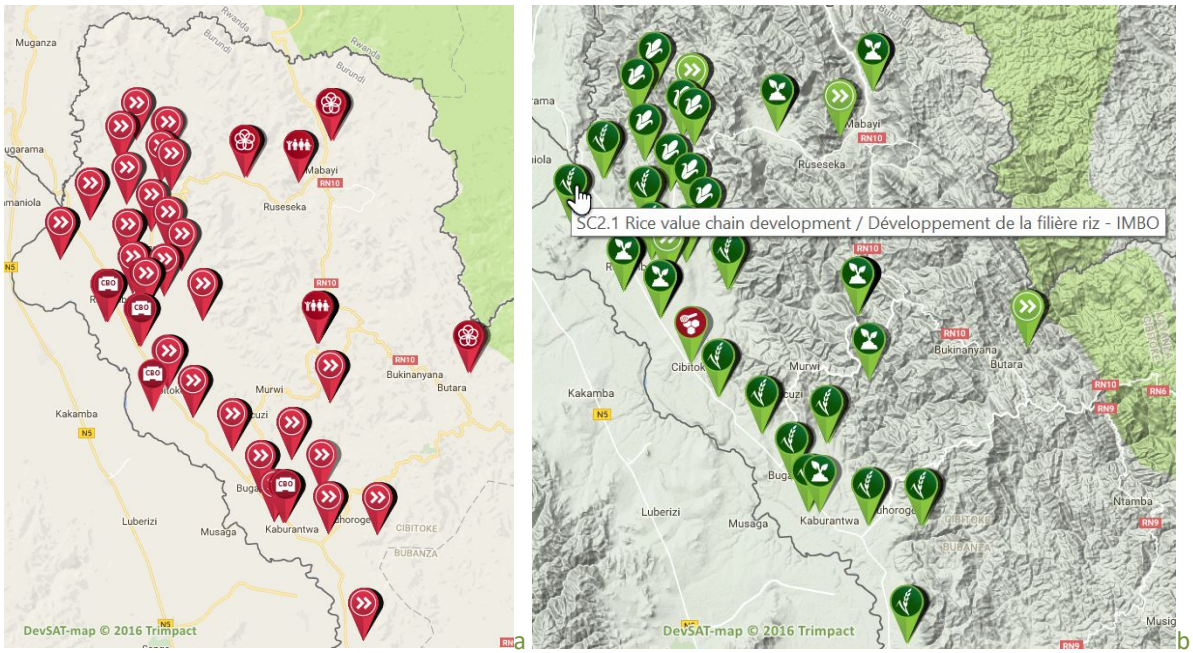
Figure 3.6. Location of a) projects in Cibitoke in terms of SDGs, and b) projects having SDG5 in common and mapped in terms of target groups.

3.2.2 Target groups

Most projects (including PAPAB) address multiple target groups (Figure 3.7a), and those projects with the same target groups are listed in Table 3.2. Similarity can also be analysed and mapped based on the requirements of an individual user or during a meeting with stakeholders.

For instance, considering that PAPAB wants to increase food production in a sustainable way, projects that focus on agricultural target groups (e.g. smallholder famers, agro-pastoralists, agri-input dealers, and farmers associations) would be a logic entry point to start a collaboration. Figure 3.7b shows the locations of these selected projects in terms of value chains with the terrain map as background. The figure shows on the flood plain a number of value chains (apiculture, rice and mixed cropping systems) and on the slopes projects focussing mainly on maize.

How a project can profit from another project in a neighbouring province is illustrated in Figure 3.8, having women as common denominator.



a b

Figure 3.7. a) Location of projects in Cibitoke in terms of target groups, and b) locations of projects having a common agricultural target group (defined in text) and mapped in terms of value chain.

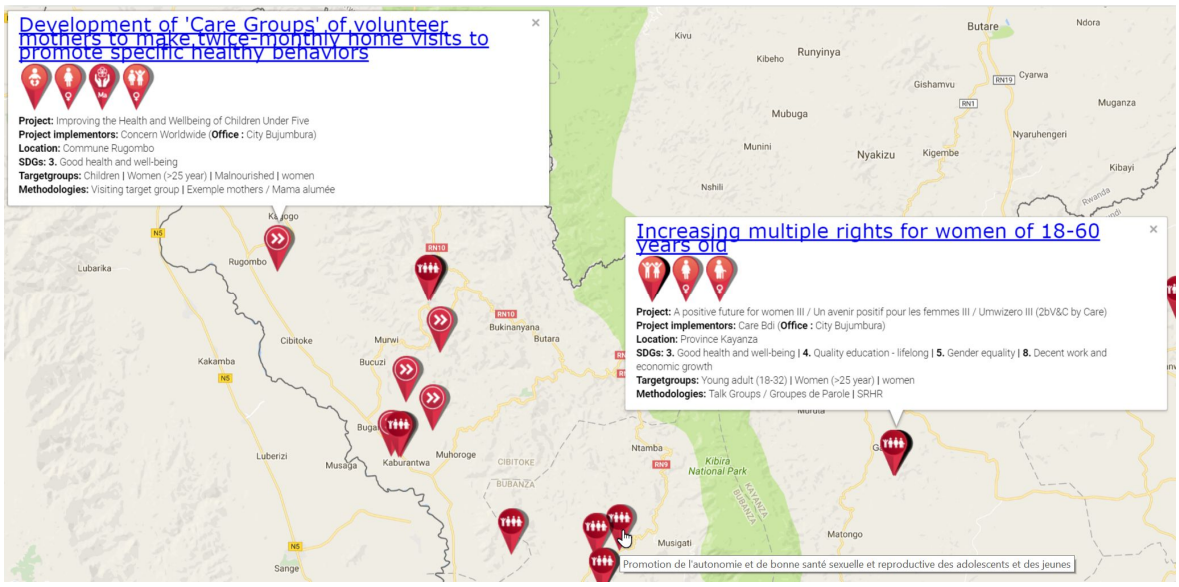


Figure 3.8. Location of projects in Cibitoke and in Kayanza having at least one common target group.

3.2.3 Value chains

Figure 3.9a shows that there are a number of projects that address also a number of value chains like PAPAB. The projects with the same value chains are listed in Table 3.2. A further analysis and mapping can be done as determined by the individual user or during a meeting with stakeholders.

Considering that PAPAB wants to increase food production of the mixed farming system, projects that focus on the value chains of maize, sorghum, pulses and beans, combined with a common target group of farmers, farmer associations, agro-pastoralists, seems to be a logic entry point to start a collaboration with. These projects are mapped in Figure 3.9b.

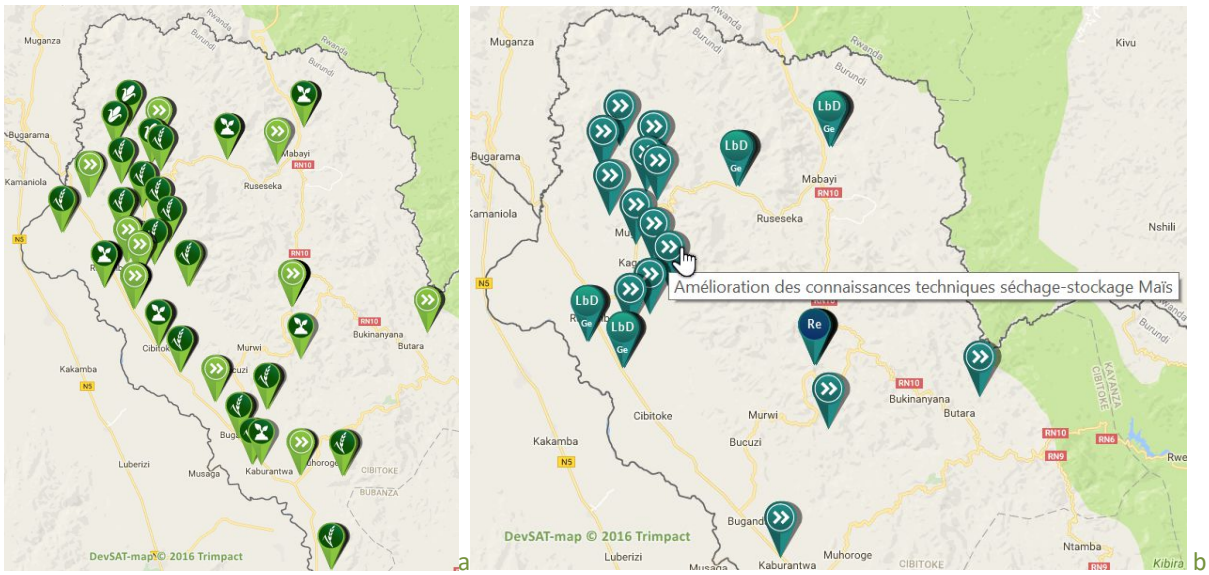


Figure 3.9. a) Location of projects in Cibitoke in terms of value chains, and b) locations of projects having in common value chains and an agricultural target group (defined in text) and mapped in terms of methodologies.

3.2.4 Target landscape unit

Figure 3.10a shows that in Cibitoke a large number of projects (including PAPAB) focus on various target landscape units. The similar projects with the same ones are listed in Table 3.2.

As an example how to analyse the information, it is known that PAPAB wants to increase food production of the mixed farming system in the mountains as well as on plateaux and slopes. Projects that focus also on these landscape units could thus be selected to start a collaboration with. These projects are mapped in Figure 3.10b.

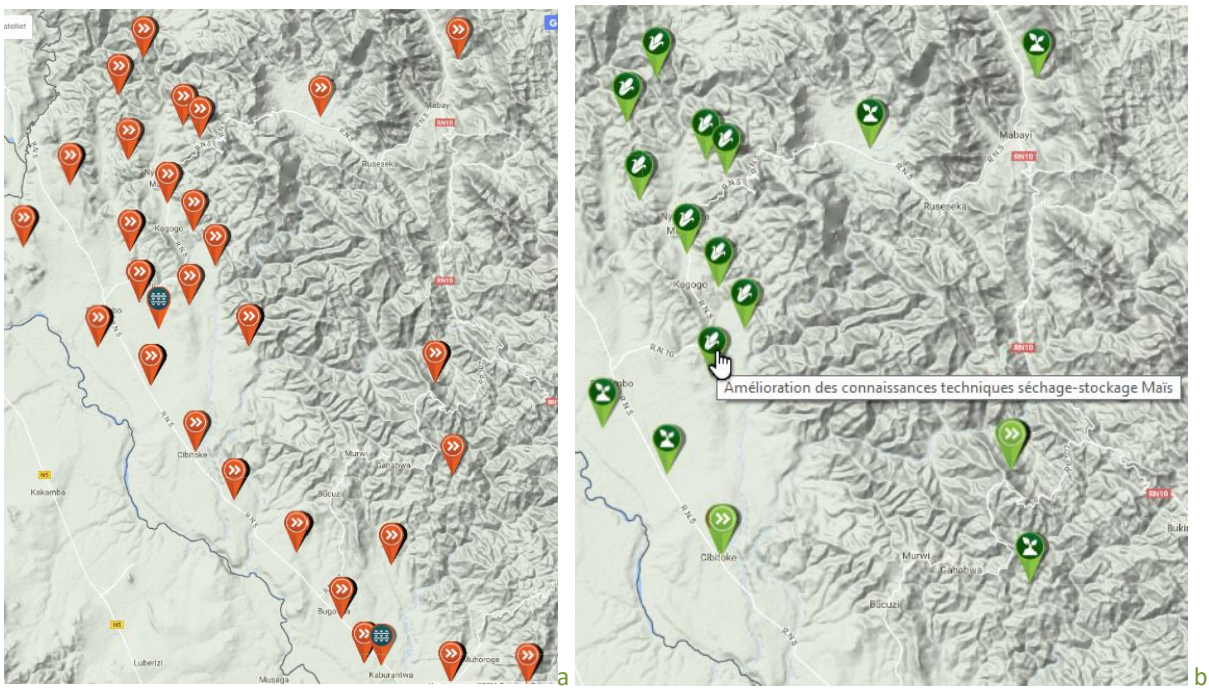


Figure 3.10. a) Location of projects in Cibitoke in terms of target landscape unit, and b) locations of projects having in common landscape units (defined in text) and mapped in terms of value chains.

3.2.5 Methodologies

Figure 3.11 shows that almost each project, like PAPAB (P2.2) in Cibitoke uses multiple methodologies to obtain their expected results. For the identification of projects with the same methodologies, reference is made to Table 3.2.

Figure 3.11. Location of projects in Cibitoke in terms of methodologies.

An example of a further analysis regarding methodologies is assuming that PAPAB wants to start a collaboration in Cibitoke with other projects selected on the basis of three criteria: 1) at least SDG2, 2) they work with target groups households and smallholder farmers, and 3) they use comparable methodologies such as Self Help Groups, Farmer Fields Schools, the PIP approach, and Lead Farmers. As a consequence of this filtering, a limited list of projects remains (Figure 3.12). On basis of this selection, methodologies could be an entry point to start a collaboration (exchange results obtained).

Project	Activity
Bring back soy beans to Burundi (2bV by HaC)	Integrated soybean-based farming systems
Building Bridges in Burundi (2bV&C by HaC)	Self help groups as basis
Improving the living conditions of children	Improving education
Programme National pour la Sécurité Alimentaire et le Développement Rural de l'Imbo et du Moso (PNSADR - IM)	SC2.1 Rice value chain development / Développement de la filière riz - IMBO
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.1 Renforcement des capacités pour la gestion intégrée des terres (a)
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.11 Supporting enterprises and cooperations in increasing production and sustainability 1
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.7 Improvement of site-specific recommendations
Projet d'Appui à la Production Agricole au Burundi (PAPAB)	P2.8 Understanding social barriers in CSA and testing CSA measures
Rusake - Organic value chain (2bV&C by Rugofarm)	Integrated soy bean - chicken farming system
Supporting smallholders farmers to grow food crops	Sensibilisation des fermiers à ouvrir des comptes à COPEC CIBITOKE

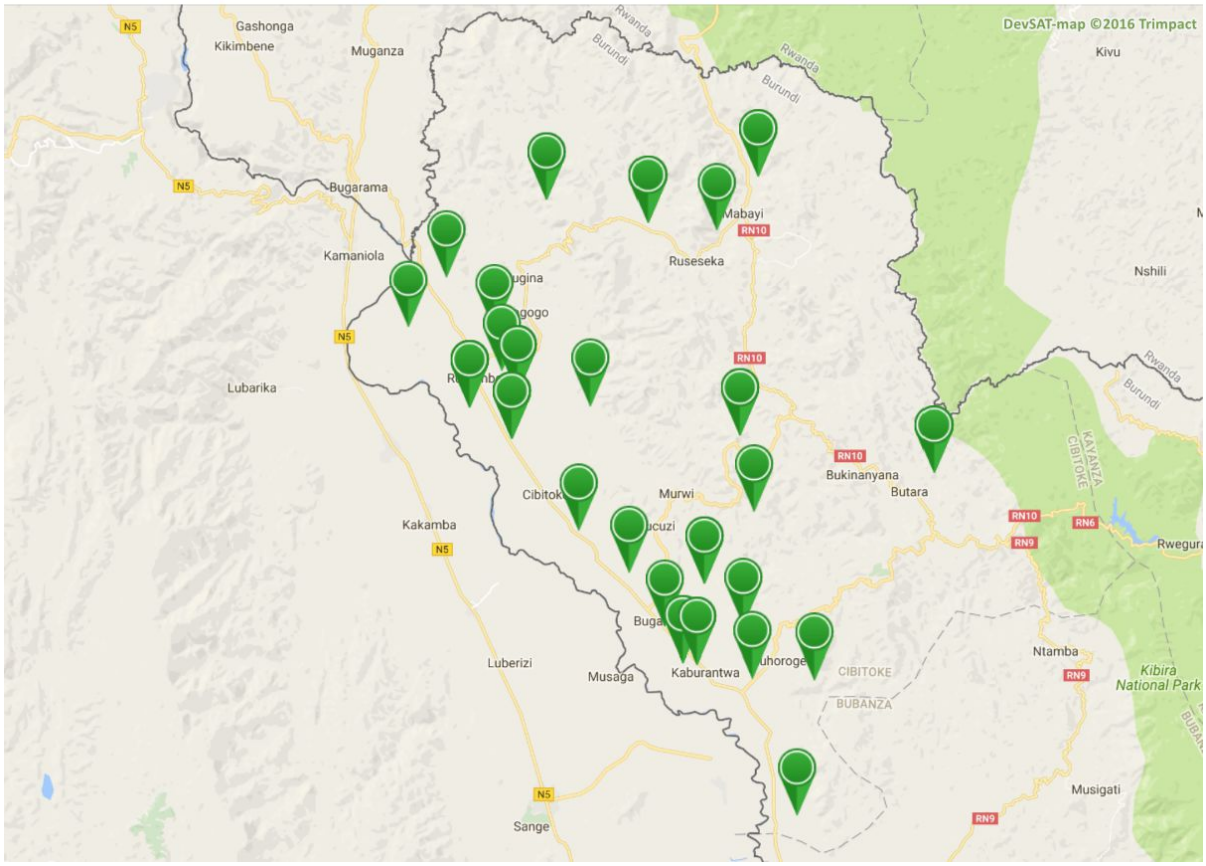


Figure 3.12. List and location of all activities of projects having in common SDG2, some target groups and methodologies (as defined in text).

3.2.6 Analysis of the importance of new projects to PAPAB

At least four projects are being planned for in Cibitoke for the next year (Figure 3.13). The projects Building Bridges (Help a Child) and Respect me (Oxfam; for which only a few details are known) have been approved, and will start in January. The private Soy bean–chicken project is being prepared now, while the Soy bean research project has been submitted to WOTRO-ARF.

Using the Similarity Index, the relevance for PAPAB can now be determined, as illustrated in Figure 3.14. Especially, the project with medium similarity, about to start could be of interest to collaborate with to increase the impact of PAPAB. On the other hand, the soybean-chicken project that is cur-

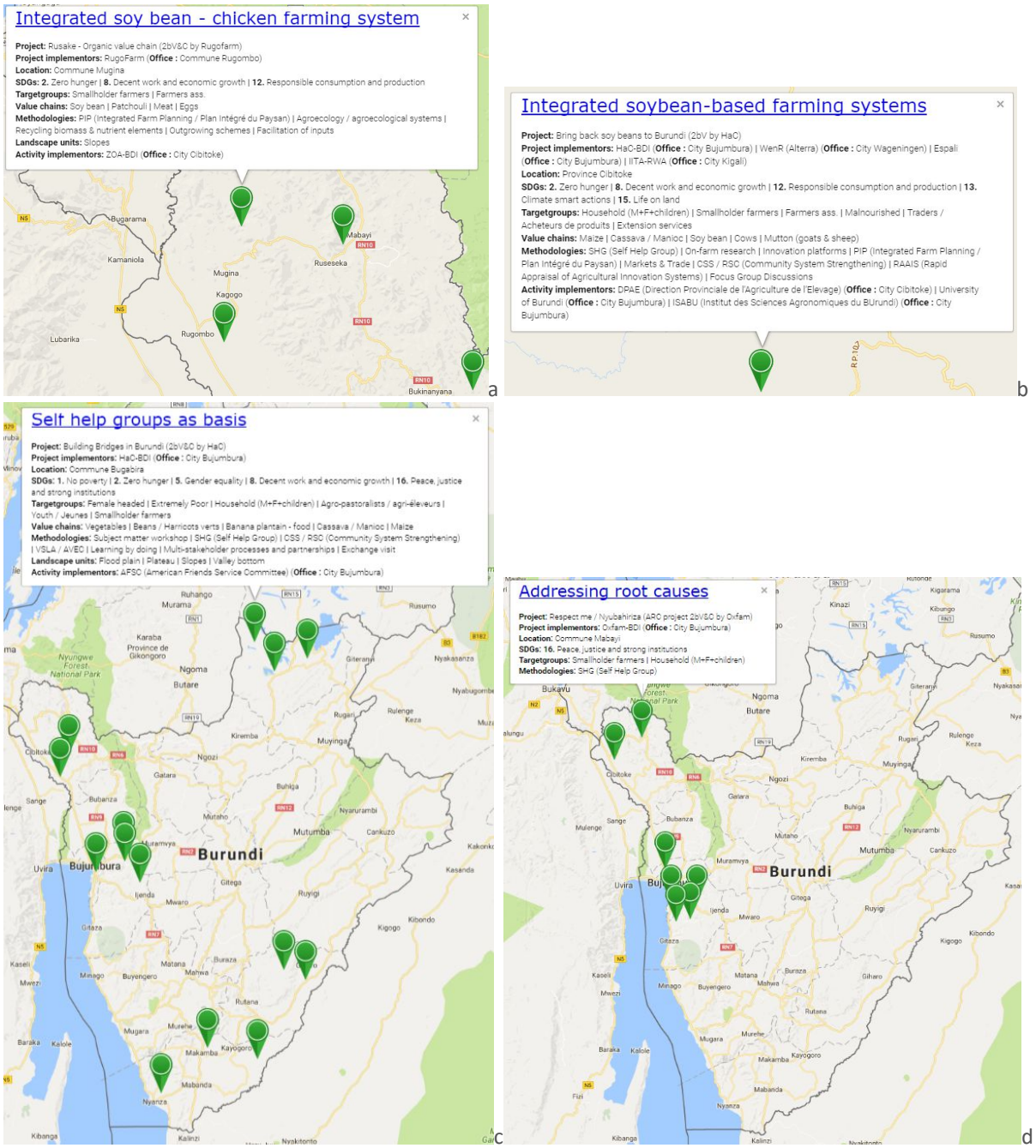


Figure 3.13. Location of the planned projects -so far included in DevSAT- in the province Cibitoke (a and b) and Burundi (c and d) as specified in the information boxes (d = only limited information obtained).

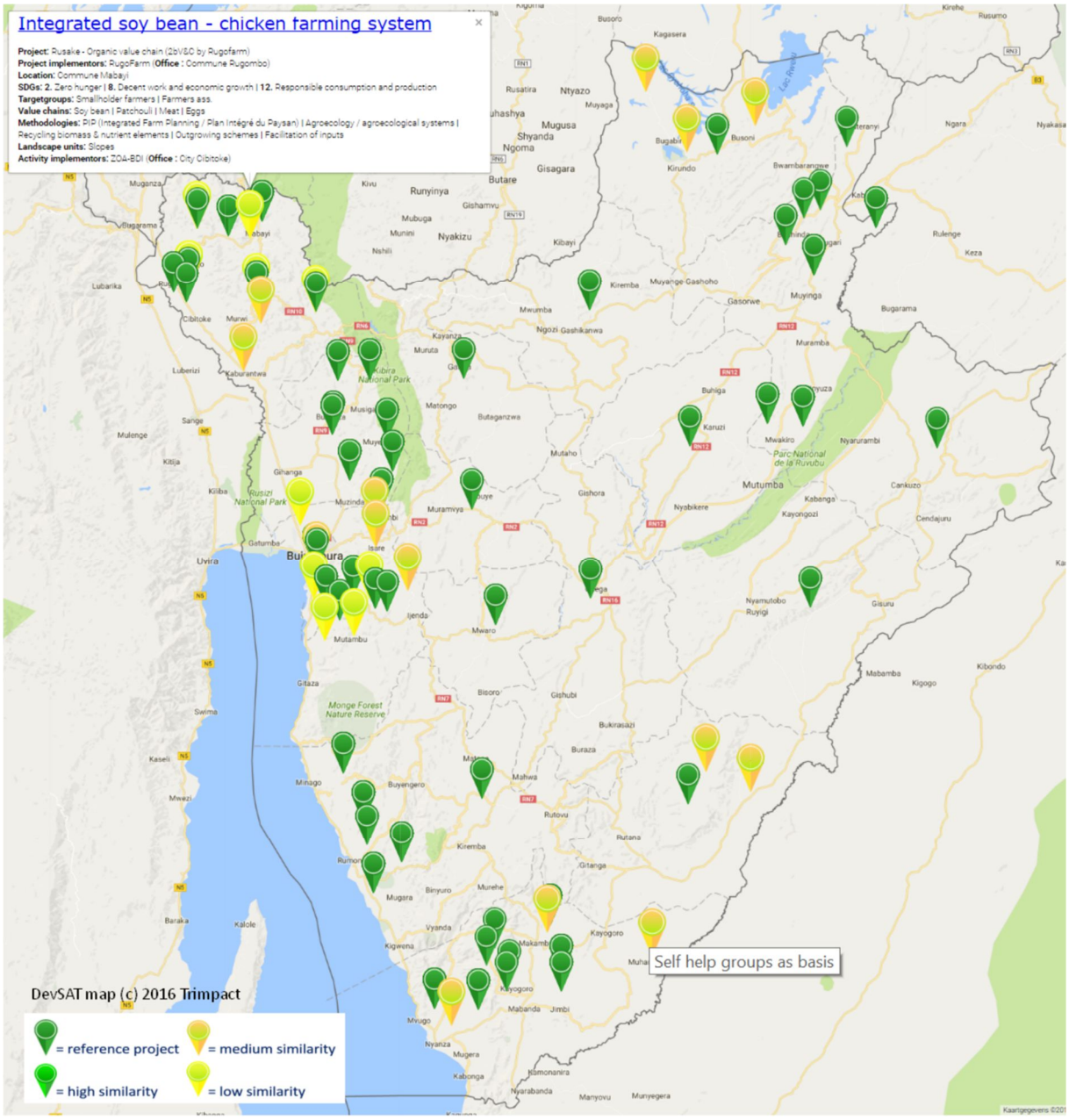


Figure 3.14. Location of similar projects in the pipeline to PAPAB so far included in DevSAT in Burundi.

rently being planned, could perhaps through some additional talks be better aligned (e.g. use of PIP approach to increase sustainability) to increase the impact of that project and of PAPAB.

3.3 Prioritization of PAPAB linkages

3.3.1 Identification of its SDGs and SDG targets

The challenge for Burundi and many other countries is to realize the required steps towards all the SDGs. The Geneva consultation (7-8 November 2016) indicated that the main targets for Burundi are Food Security/Agricultural production, Health and Education (FAO, GSSAME meeting 30 November). This implies that PAPAB has a crucial role to play, and preferably in alignment with other partners of MINAGRIE such as FAO, IFAD and NGOs that work in the field of food security and agriculture. Van

Duivenbooden (2016b) provides a updated list of the status of the partnership of those organisation to PAPAB.

DevSAT will get a function through its dashboards (mid-January 2017) that when certain needs exists (e.g. in terms of SDGs), on-going projects will verified on their potential deliverables to those needs. The needs that cannot be met should consequently be taken care of through a new project or as a joint activity of those on-going projects. This process is illustrated in Figure 3.15 for a given region (Cibitoke).

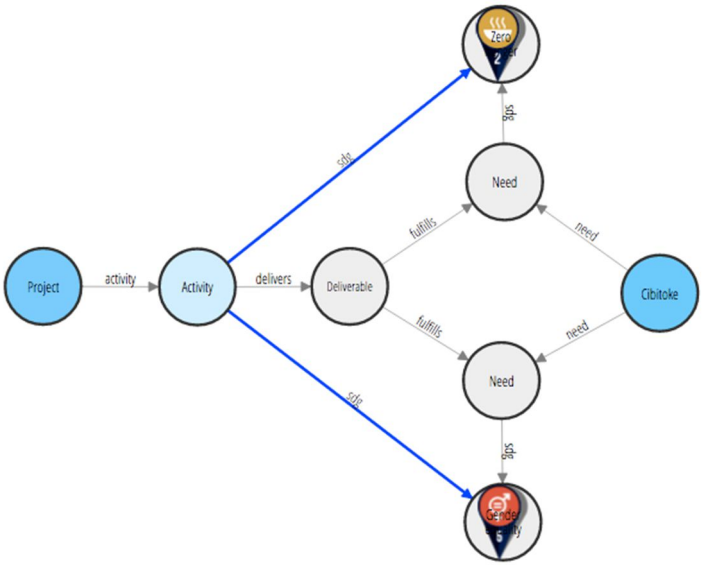


Figure 3.15. The logic in searching for missing activities that should be covered by a new project or an additional joint activity in a specific location.

3.3.2 Addressing climate change (SDG 7 & 13, SNPACC_2013, and INDC)

Climate change is affecting Burundi's agricultural production. Currently, the province Kirundo is experience one of the worst drought is years. Various studies have been executed and a national strategy has been made to address climate changes (*Stratégie Nationale et Plan d'Actions sur le Changement Climatique*; MEEATU, 2013; for the programmed actions see Annex 3). Without going into all details (beyond the scope of this report), Baramburiye et al (2012) shows two models (Figure 3.16) to demonstrate that Burundi's climate will become warmer (by 1-2.5°C) with associated expected effects on drought severity (Fig. 3.16c). Given Burundi's tropical humid climate, this would imply high evapotranspiration rates, reducing the water available for plant growth and other uses. They also conclude that CSIRO and MIROC models show that without technological improvements, yields for rainfed maize over most of the country will decline by 5-25%, with a few areas showing yield increases of the same amount. Given that maize is one of the five most important foods in Burundi, yield losses would erode food security. If we zoom in for Cibitoke (Fig. 3.16b), we see in both models serious expected yield losses.

Climate Smart Agriculture (CSA) should increase the resilience for climate change. However, there are significant challenges including the increasing fragmentation of farms, uncertainty in land tenure (especially concerning women's access to land), and access to credit, inputs, and markets. Some of the aspects are being studied in PAPAB activity 2.8 (see Subsection 2.2.8).

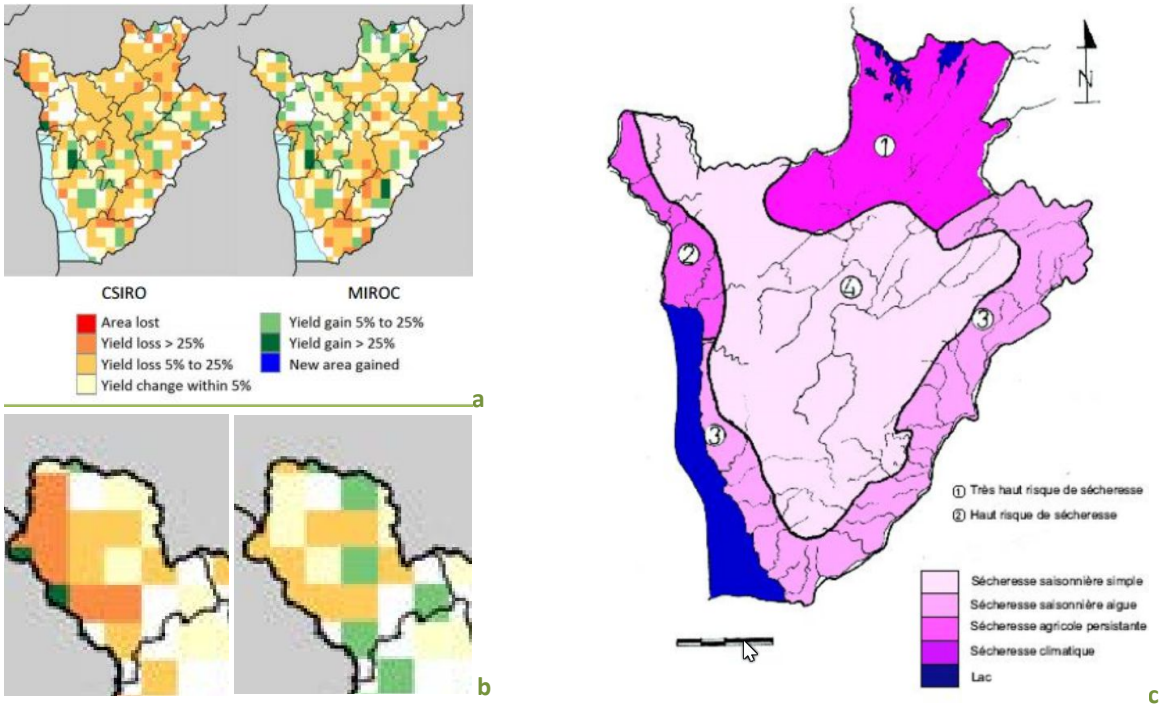
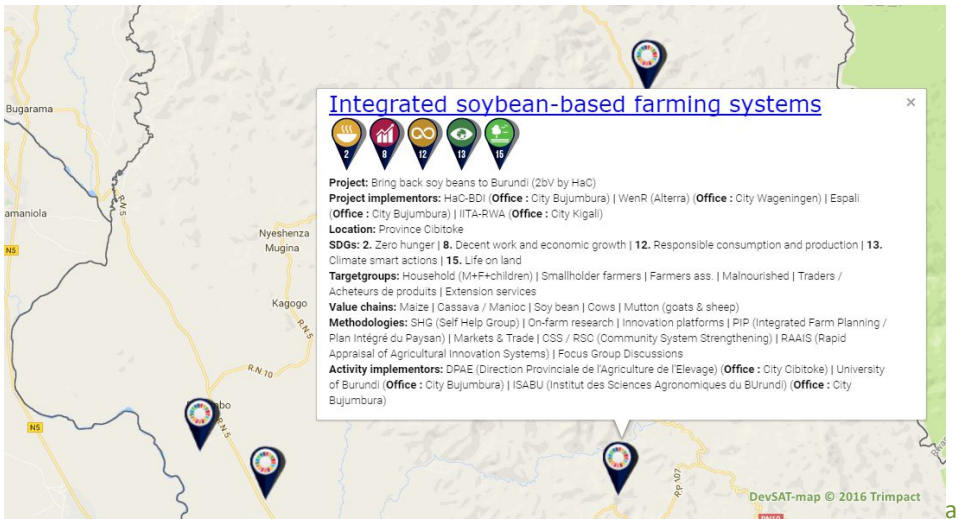


Figure 3.16. Two distinct model outcomes for climate change in a) Burundi and b) Cibitoke (Baramburiye et al 2012), and c) expected droughts in Burundi (MEEATU, 2013).

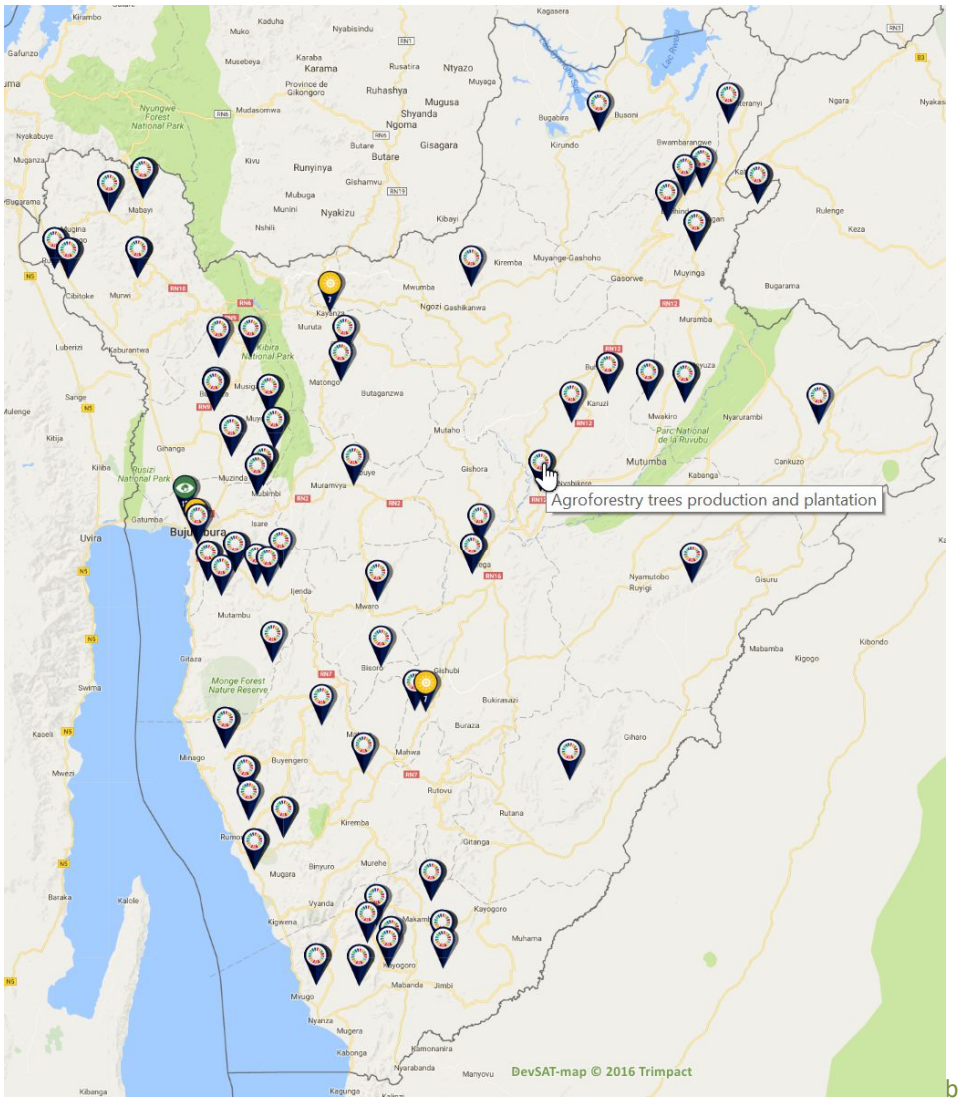
When we use DevSAT to preliminary map the projects focussing on CSA in Cibitoke, in terms of SDGs 7 and 13 (Figure 3.17a), we must conclude, that even with the restricted number of projects included in DevSAT, too few projects include activities related to climate change. Moreover, for the entire Burundi (Figure 3.17b) the number of projects addressing climate change is also limited when PAPAB is excluded. FAO's global assessment of the INDCs (FAO, 2016) clearly shows that countries expect the agricultural sectors to play a significant role in responding to climate change.

For a further and improved analysis aiming to support to the execution of the Intended Nationally Determined Contributions (INDCs[2]) more projects in DevSAT would be needed, and each project should define it contribution to the targets of INDC-Burundi (this can easily be included in DevSAT). According to FAO (2016), Burundi intends to replace gradually all inorganic fertilizer by organic fertilizers (by 2030), to promote CSA based on agrometeorology, and integrate CSA into the PNIA. In that way DevSAT can be an instrument to link a project activity to all national and international strategies and action plans.

[2] INDC = clear indication of a country how it intends to respond to climate change and where they require international support.



a



b

Figure 3.17. Locations of projects with SDG 7 and 13 in a) Cibitoke, and b) Burundi.

3.3.3 Biodiversity & Food security

Trade-offs between food security and biodiversity are driven by various interdependent socio-economic and biophysical parameters that operate at both global and local scales (Delzeit et al 2016). They conclude that certain regions in Africa deserve further attention and more detailed and context specific assessments to understand the possible outcomes of different food security strategies, while at the same time establishing mechanisms to efficiently protect habitats with high biodiversity.

In Burundi no strict natures serves exist (Figure 3.18), implying that people live in protected areas. During a mission to such a protected area in Rumonge, the consultant and the CoP of PAPAB were confronted with a significant pressure of the population on the land with associated consequences in terms of land degradation. Here a link between nature conservation projects and PAPAB-like projects with an integrated approach is urgently required to save on the one hand the biodiversity and on the other hand to feed the people living there. In that sense, a link with Burundi's contribution to the Bonn initiative '*Restauration des Paysages au Burundi*' (task force met on 9 December led by IUCN) could be beneficial to both projects (PAPAB could have an additional support to invest in natural resource management including planting trees, and the initiative could profit from the PIP approach). Figure 3.19 provides an overview of projects that address SD15 (Life on Land). When another filter of deliverable 'planted trees' the number of projects reduces further. Since specific nature conservation projects (including the WB project on sustainable coffee landscape) have not yet been included in DevSAT, we can draw no other conclusion than that these types of projects should be included to permit an analysis of concluded and current projects.

For PAPAB, it is recommended to stress the importance of indigenous multipurpose trees (such as Muringha) in the PIP approach. During the SCAD project one innovative farmer in Gitega had as one of his activities to multiply these trees while most of his colleague farmers were focussing on eucalyptus. Of interest could also be the experience of COPED, OBPE, and others in planting bamboo. (COPED and OBPE, pers. comm).

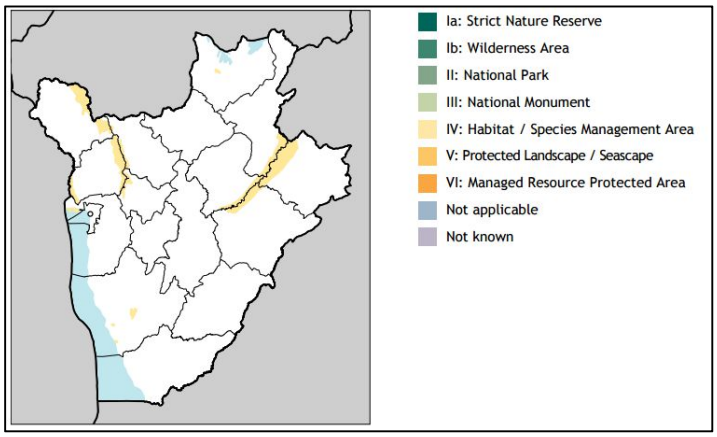


Figure 3.18. Protected areas in Burundi (from the world database UNEP and IUCN 2009; figure from Baramburiye et al 2013).

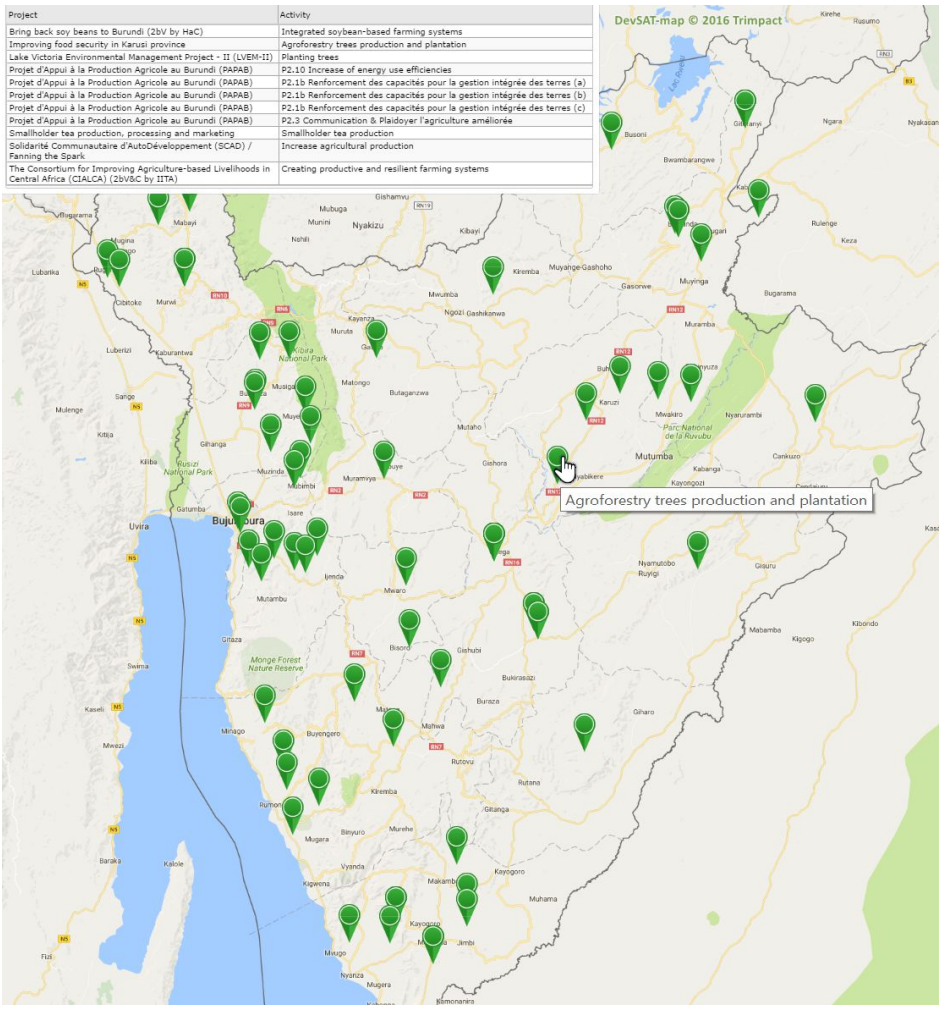


Figure 3.19. Locations of projects that include SDG15 (life on land) in Burundi.

3.4 Next steps to be taken

3.4.1 Working with planners

With the first results becoming clear, a next step in further validating this work with DevSAT is to work with planners at the level of ministries, province (e.g. *Comités Provinciaux de Développement Communautaires (CPDC)*) and commune (e.g. *Comités Communaux de Développement Communautaires (CCDC))* with the various stakeholders as illustrated in Figure 3.20.

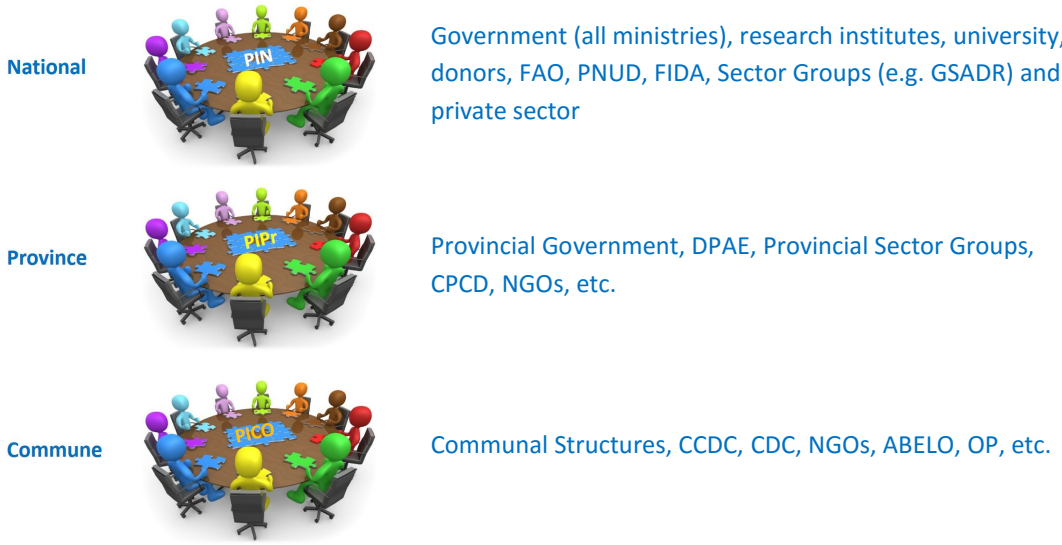


Figure 3.20. Stakeholders of integrated development plans being potential users of DevSAT.

3.4.2 Bridging international and national plans and strategies

As mentioned in Subsection 2.2.4, the SDG-targets have not yet been determined by PAPAB nor by most other projects that started before September 2015. Therefore, and also serving the reporting through IATI, PAPAB should determine the SDG target they address. Perhaps in collaboration with UNDP and ministries, PAPAB could inspire other projects to determine their SDG target they address. Moreover, this should go together with identification to national plans. PAPAB and most NGOs have identified their contribution to MINAGRIE's PNIA. However, its contribution to other national strategies such as INCD and SNPACC are mostly undefined. Finally, a link to Burundi's contribution to the declaration of Bonn should be considered. Although the projects themselves do not gain from this work, at higher decision levels transparency will help in making better plans at the various levels of scale, which in itself is required to increase impact of all stakeholders.

3.4.3 Linking with the larger projects

So far, the pilot has been focussing on Cibitoke and through the informal network a number of national and international NGOs have been trained to fill in DevSAT. Unfortunately, the projects funded by the larger donors such IFAD, WB and EU have only been included to a limited extent. Table 3.5 provides a list of selected projects that could provide a natural link for PAPAB and other projects funded by the Netherlands. For instance, the recently approved WB project on coffee in a sustainable landscape (SCL, Table 3.4) could provide an excellent opportunity where forces can be joined. Also the IUCN spearheaded initiative could be an option to include nature conservation more prominently in PAPAB (see also subsection 3.3.3).

Table 3.4. Selected list of current (in black), planned and approved (in blue) and in-pipeline (in green) projects not yet included in DevSAT with potential links to PAPAB.

Project	Main Subject	Fund
Adaptation au Changement Climatique pour la Protection des Ressources en Eau et Sols » (ACCES)	Climate Change	?
Projet «d'Aménagement des Bassins Versants et l´Amélioration de la Résilience Climatique » (PABVARC)		
Restructuring of the Value Chain Development Programme (PRODEFI) (5 M US$))		Adaptation for Smallholder Agriculture Programme (ASAP)
Community Disaster Risk Management in Burundi (8.8 M US$)		Least Developed Countries Fund (LDCF)
Préparation du Plan d'Action National d'Adaptation du Burundi aux changements climatiques (0.2 M US$)		LDCF
Enhancing Climate Risk Management and Adaptation in Burundi (ECRAMB) (3.2 M US$)		LDCF
SPWA-CC Energy Efficiency Project (1.8 M US$)		Global Environment Facility
Health Sector Development Support	Health	Worldbank
Burundi Coffee Sector Competitiveness	Agriculture	Worldbank
Productivité et de Développement des Marchés Agricole (PRODEMA)		IFAD
Promotion of Small Hydro Power (SHP) for Productive Use and Energy Services (1.6 M US$)	Climate Change	Global Environment Facility (GEF)
Infrastructure resilience emergency (25 M US$)		Worldbank
BI-Jiji and Mulembwe Hydropower (100 M US$)		Worldbank
Sustainable Coffee Landscape (SCL) (4.2 M US$)		Worldbank
Programme Régional Intégré de Développement Agricole dans la Plaine de la Rusizi et de l'Imbo	Agriculture	Worldbank
Restauration de Paysage (initiative de Bonn)	Environment	IUCN

3.4.4 Further improvements of DevSAT

Although beyond the scope of the pilot phase, the pilot phase and filling in project in other part of Burundi has certainly helped and will continue help to improve DevSAT for the benefit of its users, including PAPAB. The following is planned to be done in the coming weeks (before mid-January):

1. Adaptation of the project information form:
   a. National Plans are selected from a dropdown list (already programmed in the back side);
   b. Filling in the Help icons in French.
2. Building of simple dashboards to allow the users to map and create tables for their own use and reports such as:
   a. The examples as presented in Section 3.2;
   b. Maps showing projects filtered on new criteria: 1) an item needed(i.e. the deliverable from other projects; e.g. training, supplies, capacity building); 2) donor; 3) status of the project (current, past and future projects);
   c. Maps with spider-graphs (to be used for multi activities in one location).

   A user can thus search for a matching project based on 6 criteria or a combination thereof.
3. New version of the bi-lingual manual (French and English).

Planned improvements for 2017 are (list not-exhaustive):

1. The project information form:
   a. Including a Request/Search as field (similar to Deliverables) to have a supply-demand function within DevSAT;
2. Updating the list of collines. The list received through MINAGRIE-DFS with all the collines used for the fertilizer subsidy program is different than included in DevSAT. Table 3.5 shows for the province of Cibitoke the differences with apparently subdivisions of old communes into smaller units and subsequently changes of names. The analysis for the other provinces need to be made as well.
3. Interactivity of DevSAT:
   a. using the markers to be able to send directly mails to the project selected;
   b. get an alert when a project starts in the area or domain of interest.
4. Maps with atlas items, e.g. a indicator for meteo-station or rainfall meter with direct link to site of MINAGRIE for actual data;
5. Link to interactive Theory of Change

Depending on the need of users, we can build in additional features (as part of a project with that user), such as, automatic reporting, geolocations of specific infrastructure (e.g. hangars, markets, fish ponds), and budget verification (projects versus activities).

Table 3.5. List of collines in DevSAT; names in red are new ones conform list of DPAE (October 2016) that need geo-referencing. Light blue text are georeferenced collines, but apparently old names; green text collines temporarily listed as one in DevSAT.

Commune	Zone	Colline
Buganda	GASENYI	GASENYI CENTRE
		GASENYI RURAL
	?	Kagunuzi
Bukinanyana	BUMBA	BUTARA
		RUNEGE
	GAHABURA	RANGIRA
		KIBAYA II
		MIKONI
		MURENGERA
	MASANGO	BURIMBI II
		MASANGO
	NDORA	BITARE
		BURIMBI I
		KIBAYA
		MYAVE
	RUSENDA	KABERE
	?	Bubegwa
	?	Burimbi
	?	Gakomero
	?	Nderama
Mabayi	BUHORO	BUSESA
		RUMVYA
	BUTAHANA	MAGEYO
	?	Butahana
		Mabayi
Mugina	RUBONA	NYAMIHANA
	RUGAJO	KIRINZI
Murwi	BUHAYIRA	MUZENGA
	BUHINDO	KAJERAMA
	MURWI	GITOHERA
		MASHA
Rugombo	CIBITOKE	RUSIGA
	KIRAMIRA	KIRAMIRA I
		KIRAMIRA II
	RUGOMBO	MPARAMBO I
		MPARAMBO II
		MUNYIKA I
		MUNYIKA II
		SAMWE

4 Concluding remarks

PAPAB is a very complete project with a high potential to serve as a bridge between various development initiatives in Burundi. In fact, there is scope to link it to various projects of national and international NGOs as well as to projects from international organizations (e.g. FAO, IFAD and IUCN). At present, 27 organizations have filled in DevSAT (or shared information to have it included) with 54 projects. The analyses presented in this report show that DevSAT can help to prioritize the list of projects with whom PAPAB should interact and collaborate. It does also show that certain projects that are about to start could well be linked to PAPAB.

Although not all first DevSAT users have completed filling in their information after the first large update of DevSAT, the information filled in could be used to do a preliminary analysis. For the linking of projects the Similarity Index (based on five main project characteristics SDG, Target Group, Value chain, Target landscape unit and Methodologies) were used. This SI allowed to identify a) options for alignment and synergy of projects based on commonalities that can be used to start interacting, and b) potential extension zones of a product or a service from a given project. The linking exercise does show that for a decent linking, details of projects are needed. The projects without details will remain under the radar potentially resulting in loss of experiences and resources for others due to an increased risk of duplication of efforts. This underscores that the development process is a work done together as a team. The African proverb *'One can run hard alone, but together you reach further'* applies again. This preliminary analysis with DevSAT assists PAPAB to extend its reach in the province Cibitoke to create impact at a reasonable costs. It is planned for 2017 that the other provinces where PAPAB enrols the PIP approach will be similarly analysed. This is preferably executed in collaboration with a coordination unit bridging the various ministries including e.g. the *Direction des Statistiques et Informations Agricoles* (DSIA).

Furthermore, DevSAT is functional to the project leader in providing opportunities for an internal reflection by evoking questions such as *'Who are my real target groups? What methodologies do I use? How can our results and services be used by others?.'* Through filling in the details of the project in DevSAT's project information form new ideas can surface and may stimulate the project to open up and share information.

In this moment of time, well over 30 NGOs have expressed that they see the benefits of having DevSAT as a planning and coordination tool. They are willing to invest their time provided other do it as well. Given that FAO wants to train the members of GSSAME in DevSAT, and MINAGRIE is investigating a possible use of DevSAT, PAPAB and other projects or programs can profit from this and more collaborative links can be identified next year when the other five provinces of PAPAB are included in the analyses with DevSAT.

Finally, the pilot phase illustrates that scaling up towards other ministries including UN organizations (OCHA, PNUD, FAO), IFAD, and bilateral and multilateral donors in Burundi could support the synergy and alignment of the projects of all stakeholders required to increase the impact of all efforts for the benefits of the population of Burundi.

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Annex 1. Comparing various project inventory tools

Table A1. Comparing various tools that work on providing oversight of projects.

Caracteristic	IATI	DevInfo	AgPack	ORS	DevSAT
General Description	Makes information about aid spending easier to access, use and understand	Database system to monitor human development	Source of inspiration and invitation to start a national open data for agriculture initiative	Performance monitoring of SRP (Strategic Response Plans) activities	Interactive daily tool to find synergy and alignment to increase impact
Domain	Development	Development	Research	Humanitarian Aid	Dev., Private sector, H. Aid, Research
Source	Donors	UNDP	GODAN	OCHA	Trimpact
ODDs	SDG (since 2016)	MDG			SDG (since 2015)
Results to donors	+++	++		+++	+
National Plans & strategies	+	++			+++
Interaction between projects					+++
Interactive tool		+	+		+++
Facilitating collaboration		++	+		+++
Update requirements	4x/year: all details			12x/year	1-2x/year: only the changes

Annex 2. Detailed maps of current projects in DevSAT

Maps of the current projects in DevSAT (16-12-2016) are presented for five main characteristics: SDGs, Target Groups, Value Chains, Target landscape units, and Methodologies.

A2.1 SDGs

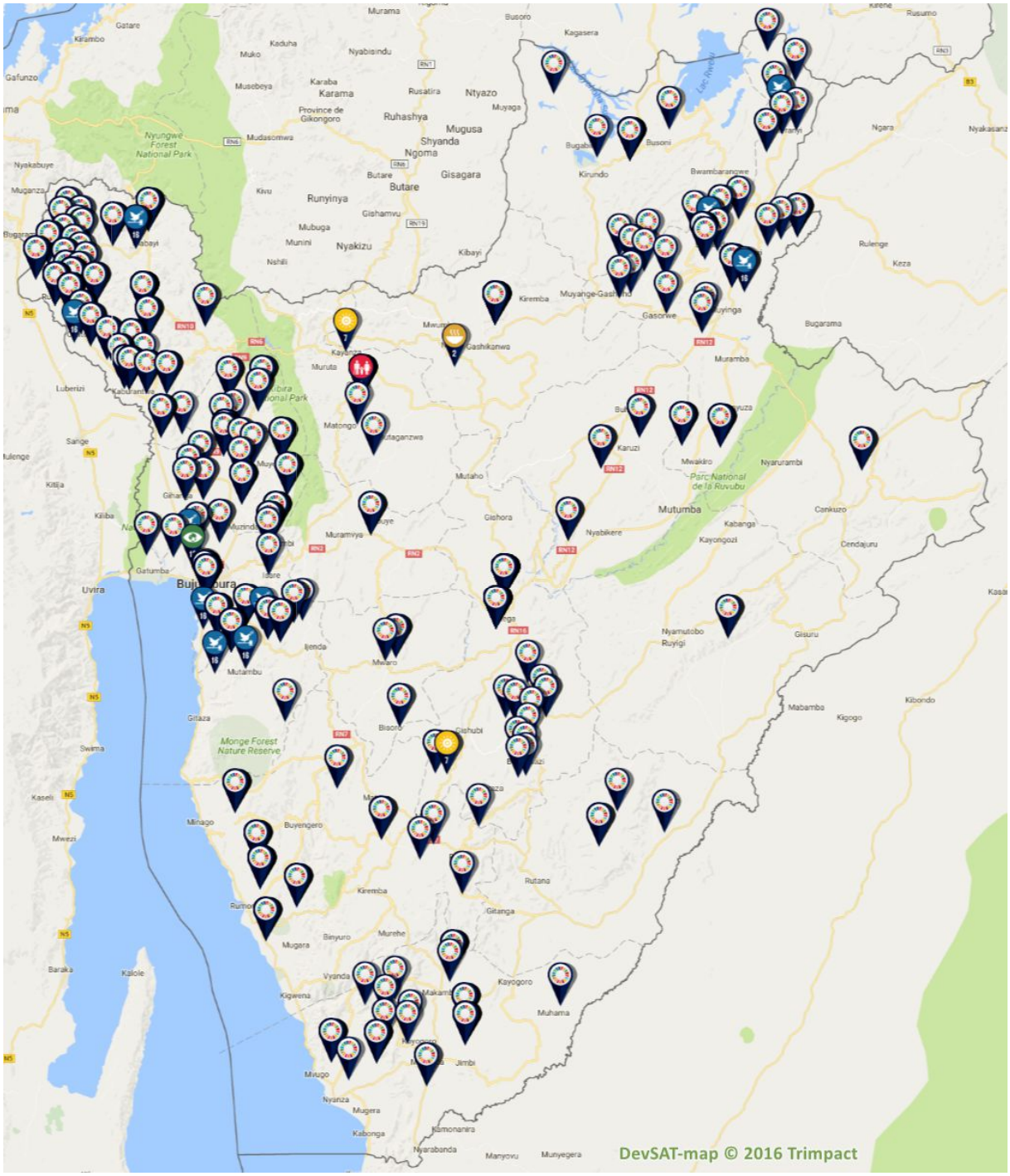

Figure A.1. Locations of the activities included in DevSAT with focus on SDGs. Each SDG has its own marker. The marker implies that the activity addesses more than one SDG; see also Figure 1.4.

A2.2 Target groups

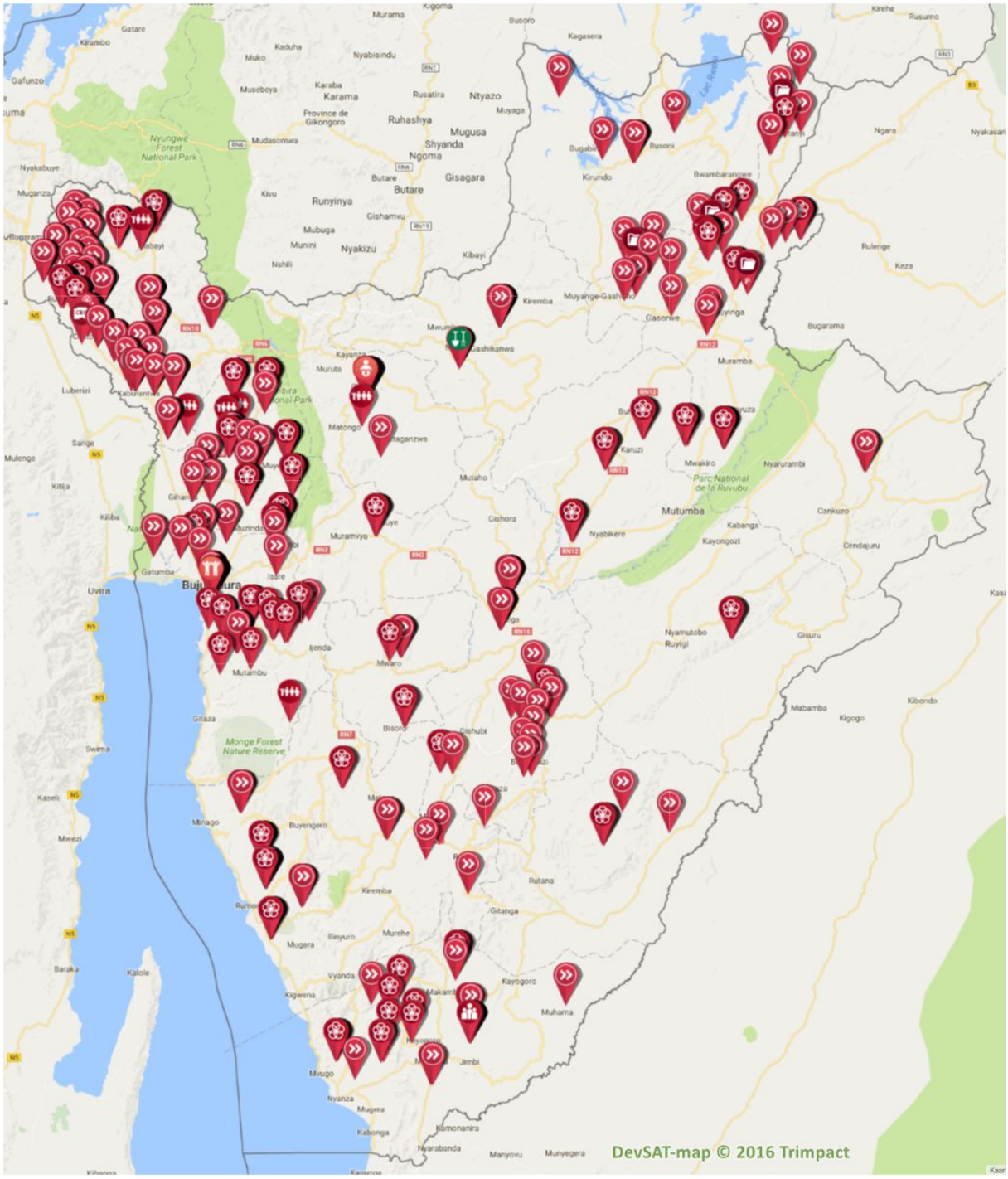

Figure A.2. Locations of the activities included in DevSAT with focus on target groups. Each target group has its own marker, e.g. = activity with more than 1 target group; = community; = households; = small holder farmers; = youth; see also Figure 1.4.

A2.3 Value chain

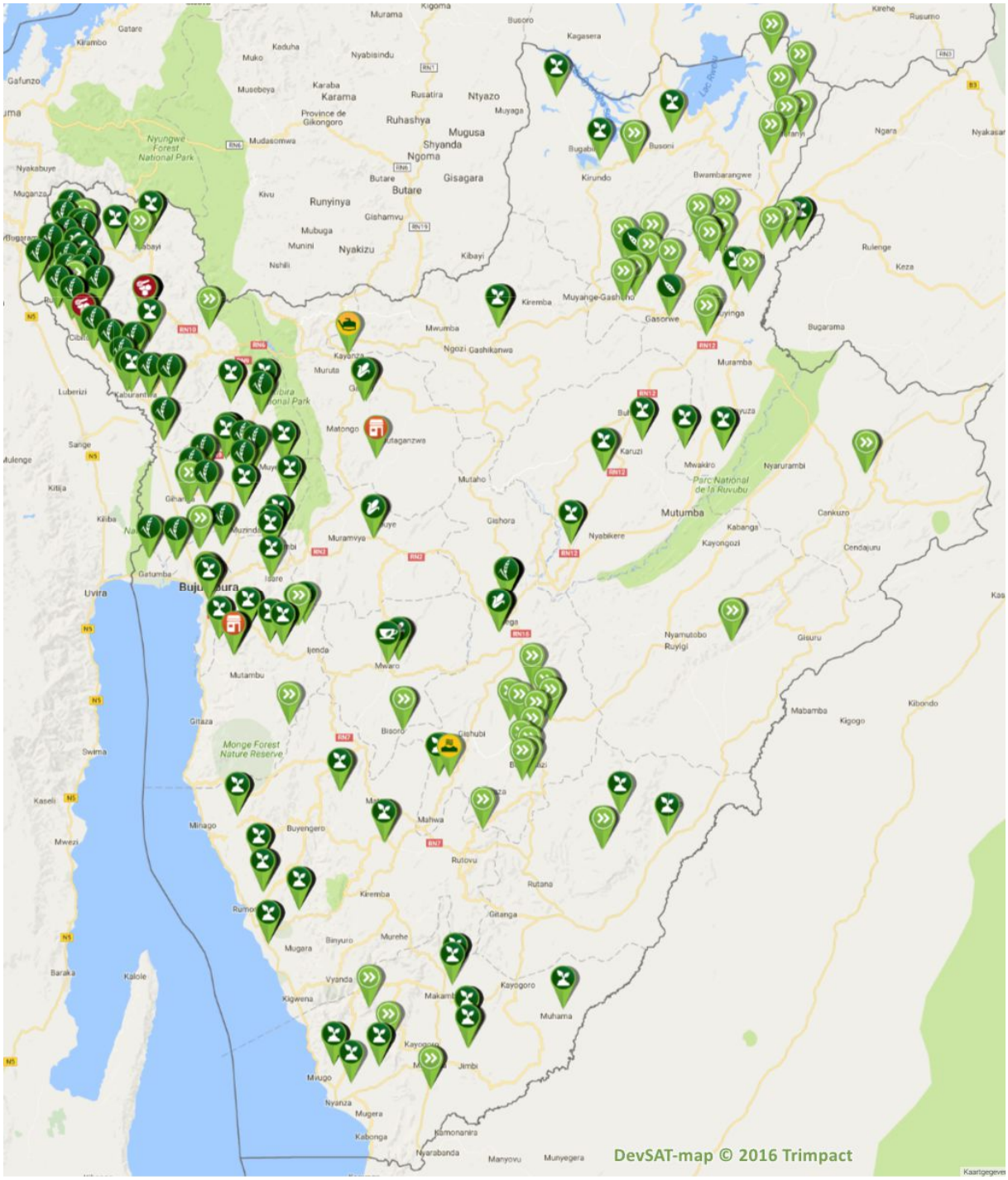

Figure A.3. Locations of the activities included in DevSAT with focus on value chain. Each target group has its own marker, e.g. = multiple value chains; = mutiple agricultural value chains; = rice; = beans; = maize; = SME; = regerating hydropower in river; = biofuels-biogas; see also Figure 1.4.

A2.4 Target landscape unit

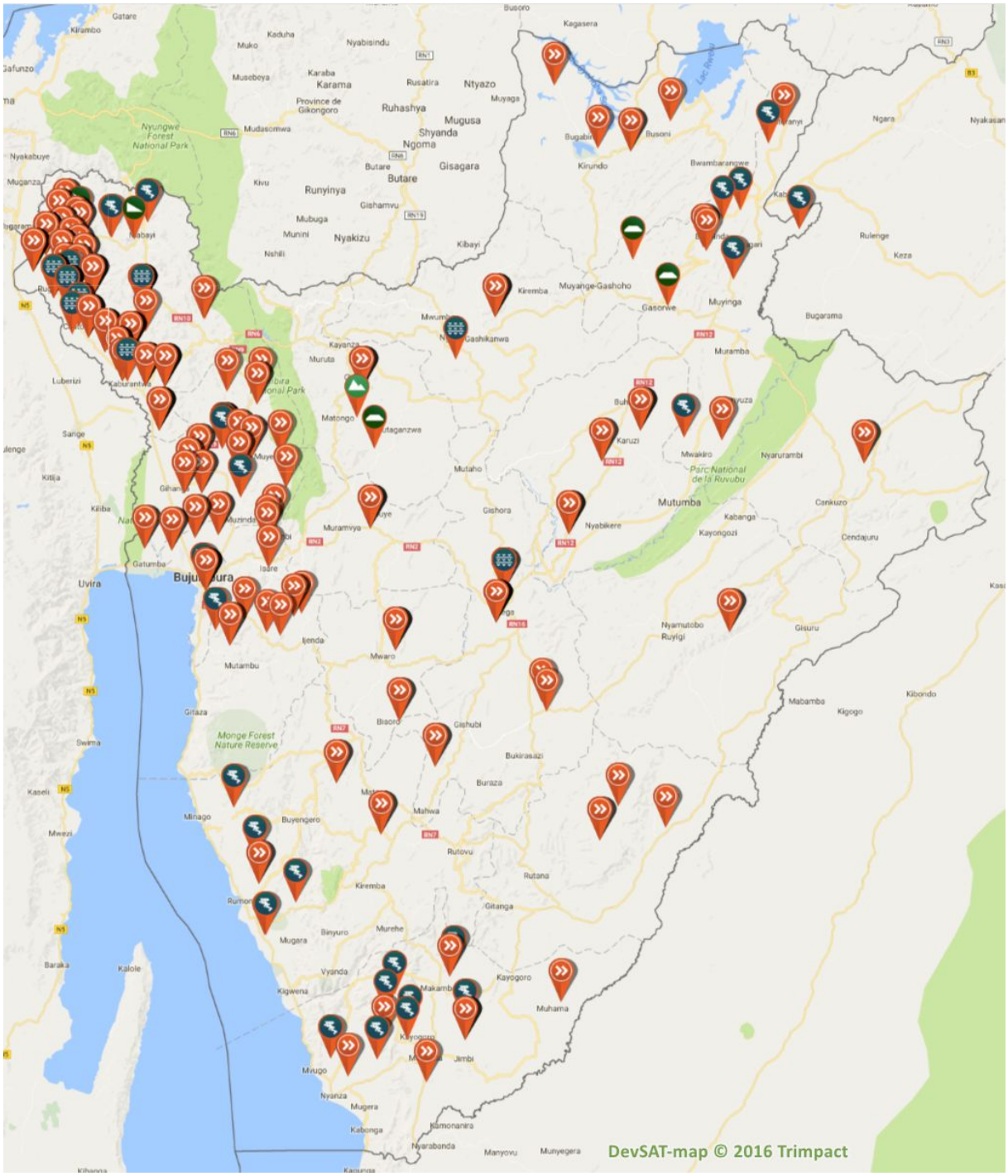

Figure A.4. Locations of the activities included in DevSAT with focus on target landscape unit. Each target landscape unit has its own marker: = multiple landscape untis addressed; = flood plain; = mountain; = plateaux; =slope; = valley bottom, and = watershed; see also Figure 1.4.

A2.5 Methodologies

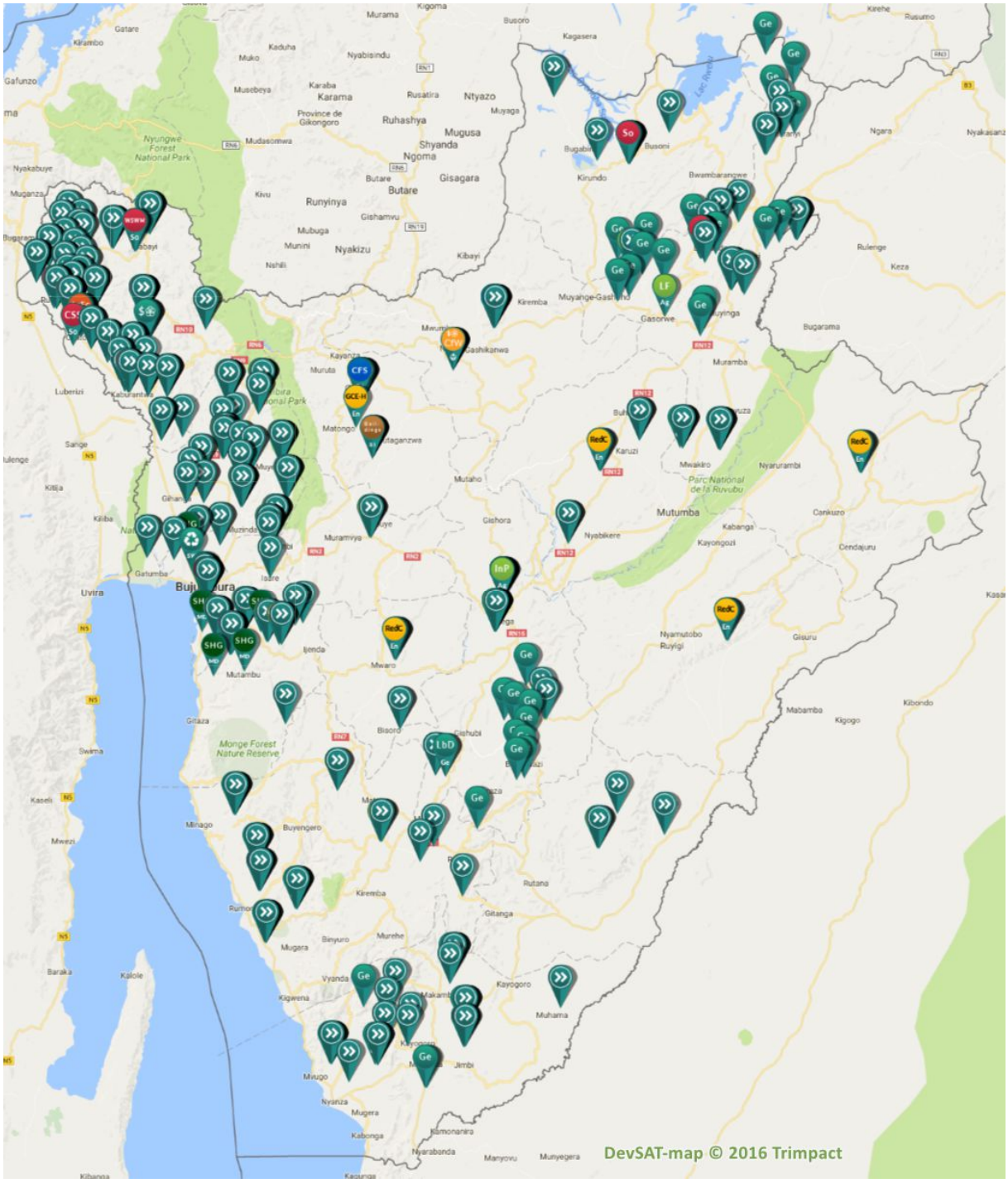

Figure A.5. Locations of the activities included in DevSAT with focus on methodologies. Each methodology has its own marker, e.g. >> = multiple methodologies; SHG = Self Help Group, RedC = Reducing Charcoal use; SubIn = subsidizing input; CSS = community strenthening; CfW = Cash for Work; GE = General; see also Figure 1.4.

A3. National action plan to climate change

The following actions have been programmed (MEEATU, 2013):

Axe 1	**Adaptation et gestion des risques climatiques.**
A1P1	Gestion Intégrée des Ressources en Eau par unité hydrologique de petite taille.
A1P2	Protection des écosystèmes aquatiques.
A1P3	Encadrement de la population pour développer sa résilience au changement climatique
A1P4	Développement des capacités institutionnelles et opérationnelles pour la coordination des programmes résiliant aux changements climatiques.
A1P5	l'adaptation économiques au changement climatique. des secteurs socio
A1P6	Etablissement des mécanismes fonctionnels de suivi et évaluation de la variabilité climatique, d'information et de gestion des connaissances.
A1P7	Recherche et vulgarisation des essences sylvicoles adaptées à la sécheresse.
Axe 2	**Atténuation des émissions de gaz à effet de serre et développement sobre en carbone.**
A2P1	Développement de l'hydroélectricité
A2P2	Electrification rurale décentralisée par système photovoltaïque
A2P3	Efficience énergétique dans la production, le transport, la distribution et la consommation (réduction des pertes, lampes économiques, équipements économes en énergie).
A2P4	Carbonisation de la tourbe, densification et carbonisation de la parche de café, balle de riz et sciure de bois
A2P5	Diffusion et vulgarisation des foyers améliorés
A2P6	Drainage intermittent dans la riziculture
A2P7	Compostage des déchets issus de la défoliation dans les plantations de cannes à sucre.
A2P8	Valorisation de la fraction fermentescible des déchets urbains avec la production du compost et du biogaz
A2P9	Programme pilote REDD
Axe 3	**Promotion de la Recherche-développement et transfert de technologie**
A3P1	Développement de la petite hydroélectricité (pico centrales, roues hydrauliques, etc.)
A3P2	Relance de la recherche-développement, la diffusion et la vulgarisation des énergies renouvelables (biogaz, énergie éolienne, gazéification).
A3P3	Techniques de valorisation des déchets urbains
A3P4	Transport urbain à faibles émissions de GES
A3P5	Adaptation de l'agriculture au changement climatique
A3P6	Techniques de valorisation des déchets de l'agriculture de la sylviculture et d'élevage
Axe 4	**Renforcement des capacités**
A4P1	Amélioration des méthodes et techniques de gestion durable des forêts et boisements.
A4P2	Amélioration des mécanismes de gestion et de diffusion des données et informations
A4P3	Renforcement des systèmes de suivi des impacts du changement climatique.
A4P4	Amélioration de la recherche scientifique et technologique pour atténuer/s'adapter au changement climatique
A4P5	Mécanisme de suivi, rapportage et vérification du REDD et d'autres actions en matière de changement climatique
A4P6	Amélioration du cadre législatif et règlementaire pour la prise en compte du changement climatique dans les programmes. d'investissement et la promotion du partenariat public et privé.
Axe 5	**Gestion des connaissances et communication**
A5P1	Renforcement du système de communication et d'échange d'informations et de données
Axe 6	**Mobilisation des financements**
A6P1	Renforcement des capacités humaines sur la formulation des projets en rapport avec l'atténuation/adaptation au changement climatique et la négociation de leurs financements.
A6P2	Mis en place et renforcement d'un cadre de mobilisation des ressources internes et externes.

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The mission of Trimpact BV, a social enterprise, is to increase the impact of development and research projects to efficiently realize the Sustainable Development Goals. Our strategy is to enhance sustainable profitable change through smart mapping and alignment, creating synergies, and supporting the organizations involved.