THE IMPACT OF TREEDOM SRL SB Evaluation Report

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_Who_Treedom. Let's green the planet

Tree /àl·be·ro/*masculine noun*1. Generic name of perennial plants with erect woody stems (called*trunk* or*jamb*) which at some distance from the ground presents ramifications of various types, bearing in turn persistent or deciduous, simple or compound leaves; the branches and leaves constitute the*hair*, which takes on different shapes, generic or typical (globular, conical, umbrella-shaped, weeping, etc.)1.

Everyone has seen one in their life. Everyone has drawn it at least once, certainly colored it often and almost always staying within the margins. Many have appreciated its scent after the rain, some have enjoyed the shade on a sunny day, others have picked its ripe fruits. Treedom has transformed it into a powerful tool.

Let's green the planet.Halfway between a claim and a statement, Treedom has made it a philosophy of action by orienting its work towards a sustainable and biodiversity-friendly choice and creating projects for planting trees around the world for the exclusive benefit of local communities.

Founded in Florence in 2010, Treedom is the first organization that allows you to plant trees remotely and follow the story of the project they will help to realize online. Thanks to its business model, Treedom is a Benefit Corporation and has been part of the Certified B Corporations since 2014. Since its foundation, more than 3,000,000 trees have been planted in Africa, Latin America, Asia and Italy, directly involving local organizations and farmers who, in their daily work on individual seedlings, virtually connect with businesses and people on a global level through the "adoption" system. All trees are planted directly by local farmers and contribute to producing environmental, social and economic benefits with a view to fully adhering to all dimensions of sustainability and operating in line with the SDGs of the 2030 Agenda. With the sole action of planting trees, Treedom contributes to the pursuit of 9 of the 17 Sustainable Development Goals.

Gli SDGs di Treedom



the or the or benefits to them, to the place where they live and to the entire planet. A projection on the future of great relevance with respect to the pressing topic of the*global warming*which, according to scientist Stefano Mancuso, can be countered through actions aimed at reabsorbing the carbon dioxide released into the atmosphere. But what is the most effective and plausible way? "Plants are far more efficient than any system invented by man to capture carbon dioxide. If we stopped cutting down forests and managed to plant a trillion trees in the world, we could reduce the surplus of CO by 30 percent²".

_Why_Much more than a tree. Path objectives

Treedom has chosen to undertake, with the scientific and methodological support of ALTIS – Università Cattolica, through its advisory team, and Stefania Farina – Sustainability strategies and projects Advisor, a path aimed at creating a model for monitoring and measuring the impact of its agroforestry projects around the world. A model that is characterized by its replicability over time and by its adherence to the different environmental and socio-cultural contexts of all the countries in which Treedom operates.

Measuring impact means changing your paradigm, abandoning the sole evaluation of performance in favor of a more organic system of evaluation of your work. What catalyzes attention is the need to measure the effects generated by the activities of an organization, on the territory and on the community of reference, through a quantification of the relative importance that the relevant stakeholders attribute to the changes experienced by each of them in their lives thanks to the work of the same.

Measuring impact is equivalent to starting a dialogue: it is a choral work that combines skills and scientific method with knowledge and experience of the specific context. Impact assessment is configured as an essential strategic tool for analysis and planning available to the organization because it allows to deepen the knowledge of its ecosystem, identify projects similar to its mission and business vision and make its management efficient in terms of resources, improve its accountability and structure an effective communication flow towards stakeholders in terms of valorization of the results achieved.

The impact assessment conducted with Treedom therefore aims to determine how and to what extent agroforestry projects represent, for all stakeholders involved, *Much more than a tree*.

_How_Every Tree the Right Way. Methodology and Work Plan

In line with the principles of Social Value's social impact assessment, the methodology adopted mainly refers to the Theory of Change and follows a*stakeholder driven*, with several successive phases. The fundamental characteristic of this methodological process lies in the fact that, through the involvement of relevant stakeholders, it is possible to collect their opinions and experiences about the change paths, determining the dimensions of *outcome*to be attributed to the various activities of Treedom, in an attempt to contain*bias*and self-referentiality that could arise from questions selected in desk mode.

The theoretical framework of the Theory of Change is based on the observation that the construction of the impact is realized through causal links and gradual and successive changes over time: thanks to the activities provided, the beneficiary initially expands his/her theoretical knowledge, subsequently increases his/her skills or begins to plan the implementation of the theoretical knowledge previously developed and finally implements the change through a modification of his/her behavior. Consequently, the definition of the indicators is structured according to these elements of the change: in some cases they will aim to ascertain the mere theoretical knowledge derived from the satisfaction generated by the intervention, others the skills developed in relationships and still others the modification of behaviors and the increase in the psychosocial well-being of the beneficiary.

_Who1_Around the World: Impact Stakeholder Mapping

Different projects, in different countries, but following the same philosophy: to achieve environmental and social benefits. This is the *mission* of Treedom. This is the starting point of the impact assessment process presented here.

A preliminary context analysis conducted by ALTIS professionals in collaboration with Treedom representatives has allowed us to identify**three countries – Kenya, Madagascar, Nepal**–and related projects for which to carry out the work of impact measurement, with an initial trial phase that may subsequently be extended to all the countries in which Treedom operates. This choice is dictated by the need to identify different dynamics and cultures that are representative of the globality of the active projects and significant for the definition of the evaluation framework to be shared with Treedom.



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of the organization, subject to a subsequent review aimed at identifying the stakeholders relevant from the point of view of impact and the final definition of the sample to be analyzed.

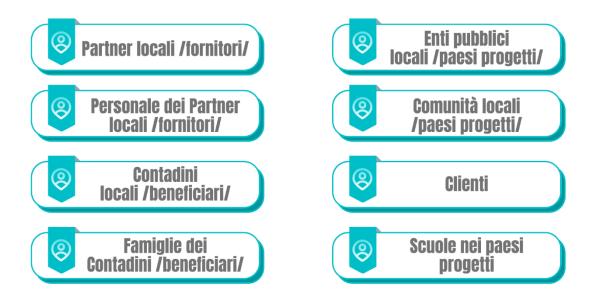


Image 3: Treedom stakeholders

_Who2_Treedom trees around the world. Selection of impact stakeholders

The selection of impact stakeholders is the first necessary step to take to start the evaluation process and establishes the choral nature of the measurement work since it sees, from the very beginning, the active participation of Treedom's representatives.

The referents were invited to fill out a structured questionnaire with the aim of identifying that specific subgroup of stakeholders on which it is possible to detect and measure the actual change that occurred between before and after the activation of the agroforestry projects.

The questionnaire asks stakeholders to be selected by expressing an assessment on three criteria:

- Willingness to get involved
- Type of expected impact
- Priority level and engagement opportunities



Image 4: Exclusion criteria

This data collection phase returns a matrix of results that allows the definition of a panel of stakeholders that is limited to the starting one and significant in terms of impact measurement. From the starting list, those groups of stakeholders that had been considered as "not to be involved" by all project referents and those for which the expected impact was null or indirect were excluded. Subsequently, the information about the priority and opportunity for involvement was analyzed and the following groups of stakeholders relevant for the impact were outlined.



Image 5: Stakeholders relevant to impact

The selection of this group of actors considered material with respect to the impact may be expanded in the future, in case other groups of stakeholders are considered relevant from the point of view of the impact.

_What_Is planting trees (always) a good idea? Theoretical framework: dimensions of impact

Planting the right tree, in the right place, for the right purpose is one of the cornerstones of Treedom's activity, which aims to achieve positive results for the environment, the planet and the development of local communities. And it is precisely the ability to immerse oneself in individual cultures, respect the specificities of the territory and guide the people involved in the projects that makes planting trees a good idea.

The measurement process continues, therefore, along this dimension of dialogue, which integrates desk research with the direct involvement of the managers of local organizations in Kenya, Madagascar and Nepal, through open interviews. The objective of these meetings was to investigate the relationships and effects of Treedom's projects on each stakeholder group, identifying:

- Distinctive features of Treedom's activities and relationships;
- Perception of the effects generated by Treedom's activity;
- Possible contribution of external subjects to Treedom to the generation of the identified effects previously;
- Potential risks and negative impacts.

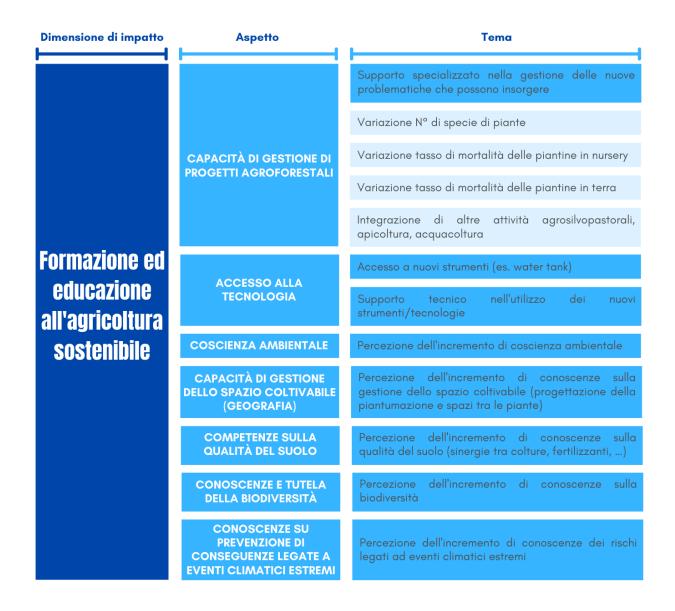
The data that emerged from the investigation phase allowed us to outline the dimensions of impact, i.e. the areas in which Treedom's activity generates a change in stakeholders, broken down into one or more impact indicators/themes.

The data collected in this way were used, together with the results of the literature review, to develop the evaluation frameworks, through the definition of change chains, impact dimensions and specific themes and indicators, able to detect the changes.

expected. The themes were transposed into items or questions for the composition of a semistructured questionnaire, specific for each stakeholder group.

The evaluation frameworks thus designed to measure the effects of Treedom's activity are represented in tables 1, 2 and 3, for each of the relevant stakeholders. It is important to underline, once again, that, according to the applied methodology, both the impact dimensions and their declination in specific aspects and themes for the composition of the questionnaires were obtained from the results of the focus groups.

FRA	MEWORK	CONTADINI
Anagrafica		Dati personali Dati sul progetto
Dimensione di impatto	Aspetto	Tema
Benessere	SICUREZZA ALIMENTARE	Alimentazione personale e famigliare integrata grazie ai prodotti delle piante coltivate con Treedom Aumento della varietà della dieta grazie ad aumento del reddito Variazione semi alimentari forniti ai contadini
personale	ACCESSO ALLA SALUTE	Accesso a forme di prevenzione e salute (visite o accesso ad assicurazioni sanitaria)
Dimensione di impatto	AUMENTO SCOLARIZZAZIONE Aspetto	Accesso a forme di educazione formale per sé o famigliari Tema
Benessere	GENERAZIONE DI REDDITO	Percentuale del reddito famigliare attribuibile all'attività con Treedom Incremento di reddito rispetto all'anno precedente attribuibile all'attività con Treedom Percezione dell'incremento di indipendenza ed emancipazione grazie al lavoro
economico	SOSTENIBILITÀ FINANZIARIA E CASHFLOW	Robustezza economico/finanziaria del business (coprire le spese del business) Capacità di spese correnti per sé e per la famiglia (coprire le spese famigliari)
	INVESTIMENTI (PICCOLE IMPRESE, PRESTITI AGLI ALTRI CONTADINI)	Capacità di risparmio Piccoli investimenti, prestiti agli altri contadini



FRAMEWORK

PARTNER LOCALI

Anagrafica

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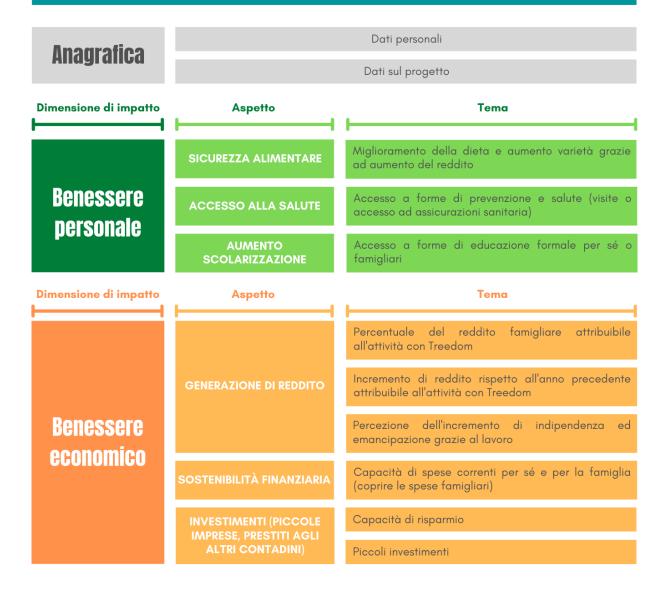
Dimensione di impatto	Aspetto	Tema			
Accesso alle	INTROITI DIRETTI	Percentuale degli introiti attribuibile all'attività con Treedom Incremento percentuale degli introiti rispetto all'anno			
risorse		precedente attribuibile all'attività con Treedom			
finanziarie	SICUREZZA FINANZIARIA	Possibilità di pianificazione sul medio periodo			
		Flusso di cassa adeguato alla gestione dei progetti			
Dimensione di impatto	Aspetto	Tema			
		Percezione dell'incremento della reputazione presso i contadini			
	CREDIBILITÀ E REPUTAZIONE SUL TERRITORIO	Percezione dell'incremento della reputazione presso comunità locali			
Riconoscimento		Percezione dell'incremento della reputazione presso altre organizzazioni locali e enti pubblici			
della organizzazione		Incremento di richieste di partecipazione ai progett agricoli			
sul territorio		Capacità di spese correnti per sé e per la famiglia (coprire le spese famigliari)			
		Incremento partnership con enti locali privati			
	POSSIBILITÀ DI CREARE	Incremento partnership con enti pubblici			
	PARTNERSHIP E ACCEDERE A BANDI	Incremento Bandi a cui si partecipa			
		Incremento dell'accesso ad accreditamenti presso enti governativi o albi (World Food Program, convenzioni,)			

Dimensione di impatto	Aspetto	Tema				
		Percentuale di alberi piantati con Treedom rispetto al totale degli alberi piantati				
		Incremento percentuale degli alberi piantati con Treedom rispetto all'anno precedente				
	VOLUME D'ATTIVITÀ DELL'ORGANIZZAZIONE	Incremento percentuale dei dipendenti grazie all'attività con Treedom rispetto all'anno precedente				
		Incremento percentuale dei contadini coinvolti grazie alle progettualità con Treedom rispetto all'anno precedente				
		Percezione miglioramento della gestione delle persone				
	METODOLOGIA DI LAVORO	Percezione miglioramento delle procedure interne				
		Percezione miglioramento del controllo di gestione				
Gestione e	EDUCAZIONE E FORMAZIONE	Competenze organizzative incrementate grazie alla formazione fornita da Treedom				
sviluppo della		Competenze tecniche incrementate grazie alla formazione fornita da Treedom				
organizzazione	EFFICACIA	Variazione tasso di mortalità delle piantine in nursery				
		Variazione tasso di mortalità delle piantine in terra				
	CONTINUITÀ NELLA SUPERVISIONE DELLE ATTIVITÀ	Percezione del miglioramento della supervisione delle attività agricole				
		Nuove attività agroforestali				
	SVILUPPO NUOVE ATTIVITÀ	Nuove attività agropastorali				
	SVILUPPO NUOVE ATTIVITA	Nuove attività di acquacoltura				
		Nuove attività sociali				
	ATTENZIONE ALL'UGUAGLIANZA DI GENERE	Variazione donne contadine				
		Variazione dipendenti donne				
	ACCESSO ALLA TECNOLOGIA	Accesso a nuovi strumenti/tecnologie grazie all'attività con Treedom				

Dimensione di impatto	Aspetto	Tema			
	MATERIALE DI PROPAGAZIONE	Il materiale di propagazione (semi e piantine) deve essere sano e selezionato, preferibilmente prodotto in azienda dai produttori medesimi			
	MECCANICIZZAZIONE	La coltivazione deve utilizzare interventi di tipo manuale o minimamente meccanizzati, in questo secondo caso devono essere appropriati e a basso impatto ambientale			
	CONCIMI	Per la concimazione si devono usare principalmente concimi di origine organica. Sono da prediligere le fertilizzazioni effettuate con compost di produzione aziendale o letami maturi derivanti da allevamenti locali o aziendali			
Buone pratiche	CONTROLLO FLORA SPONTANEA	È escluso il diserbo chimico. Il controllo della flora spontanea deve essere attuato solo con buone pratiche agronomiche (mezzi di tipo fisico e meccanico)			
di agricoltura sostenibile	PRODOTTI PER LA DIFESA	I prodotti per la difesa devono assicurare un basso impatto ambientale e, quando è possibile, deve essere praticata la lotta biologica			
2021GUIDIIG	QUALITÀ DEL SUOLO	Buone pratiche agronomiche volte al mantenimento e miglioramento della fertilità del suolo (consociazioni, rotazioni). Sono vietate le lavorazioni profonde (es. scasso) oltre i 30 cm. In caso di coltivazioni di alberi, è altamente consigliato l'inerbimento spontaneo, quantomeno nell'interfilare			
	ORMONI	Non è ammessa la somministrazione di ormoni e altre sostanze stimolanti, di acceleratori di crescita			
	IRRIGAZIONE	Tecniche che permettano la maggiore efficienza dell'uso dell'acqua e il minor consumo di materiali non riutilizzabili o facilmente deperibili. È consigliato l'utilizzo di ali gocciolanti per quanto riguarda la distribuzione, così come la raccolta di acqua piovana per minimizzare il consumo da altre fonti			
	FASE POST RACCOLTA	Nella fase del post raccolta è vietato l'uso di sostanze chimiche			

FRAMEWORK

PERSONALE DEI PARTNER



Dimensione di impatto	Aspetto	Tema				
	CAPACITÀ DI GESTIONE DI PROGETTI AGROFORESTALI	Supporto specializzato nella gestione delle nuove problematiche che possono insorgere				
	ACCESSO ALLA TECNOLOGIA	Accesso a nuovi strumenti (es. water tank)				
Formazione ed educazione	COMPETENZE SULLA QUALITÀ DEL SUOLO	Percezione dell'incremento di conoscenze sulla qualità del suolo (sinergie tra colture, fertilizzanti)				
agroforestale	CONOSCENZE E TUTELA DELLA BIODIVERSITÀ	Percezione dell'incremento di conoscenze sulla biodiversità				
	CONOSCENZE SU PREVENZIONE DI CONSEGUENZE LEGATE A EVENTI CLIMATICI ESTREMI	Percezione dell'incremento di conoscenze dei rischi legati ad eventi climatici estremi				

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different stakeholders and spread in a widespread manner thanks to the decisive on-site support of the managers of the individual reference organizations.

The surveys were administered in two ways, to offer partner organizations the flexibility needed to reach significant and heterogeneous samples: through an online platform and in paper form. The data thus collected were analyzed using statistical techniques (means, standard deviation and T-test for significance analysis of the difference between means) to describe the impact generated by Treedom's projects.

_How Much_Welcome to the jungle. The results

The farmers

Below are the results of the analysis conducted on the Farmer stakeholders through the administration of questionnaires aimed at detecting the demographic characteristics of the population under examination and the impact of Treedom's projects on the three dimensions of impact identified for this group of stakeholders.

Personal data

The questionnaire was answered by 489 farmers distributed equally between Kenya and Nepal (41.5% and 39.1%) and with a lower presence in Madagascar.

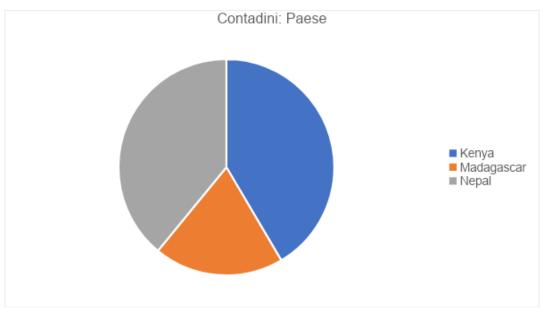


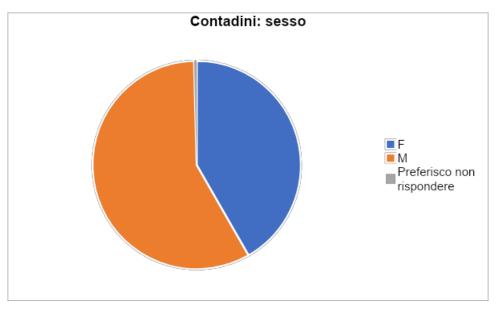
Chart 1: Respondent farmers by country

Everyone participates in Treedom projects through collaboration with organizations active in the territory that deal directly with the practical implementation of sowing, planting and monitoring, as well as training activities. The detail of the organizations involved allows us to detect a plurality of realities with regard to Kenya and Nepal, also in line with the greater number of responding farmers, who see the presence of three organizations per country.



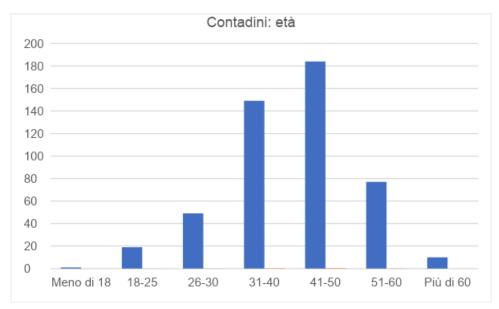
Graph 2: Respondent farmers divided by organizations they collaborate with

In the analysis of the demographic characteristics of the respondents, it is interesting to note how, in line with objective 5 of the 2030 Agenda, with particular reference to sub-objective 5.5, the projects involve men and women in a fairly balanced manner, guaranteeing the latter a "*full and effective participation and equal opportunities for leadership in the economic sphere*".

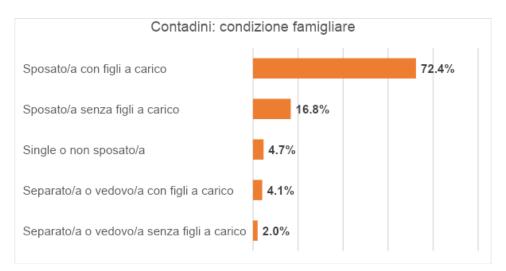


Graph 3: Respondent farmers divided by gender

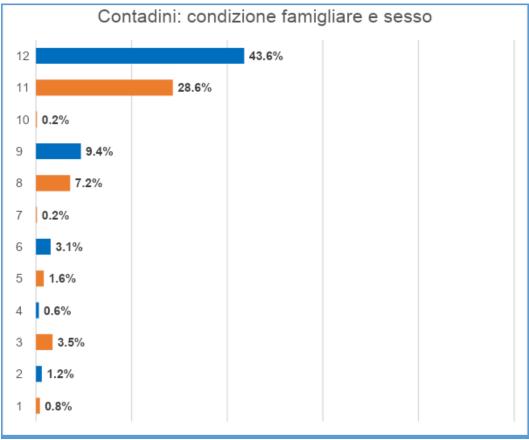
An equally significant piece of data is the distribution of the farmers involved in this analysis, among the different age groups. It is interesting to note that 68.1% of the interviewees are between 31 and 50 years old, thus placing themselves in the age group considered to be "highest productivity", with inevitable consequences also from the point of view of family conditions. In fact, 72.4% of the interviewees are married with dependent children, with a significant proportion of families composed of 1 to 3 children.



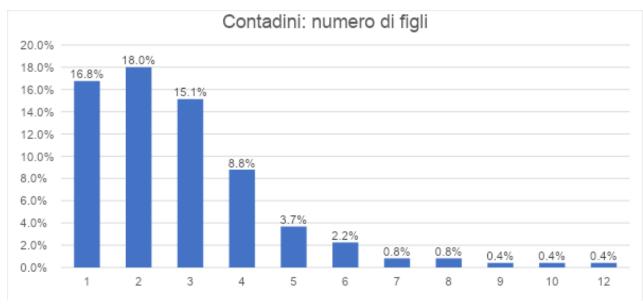
Graph 4: Respondent farmers by age group



Graph 5: Respondent farmers by family status

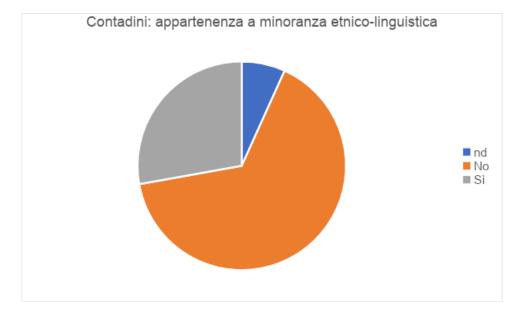


Graph 6: Respondent farmers by family status and gender



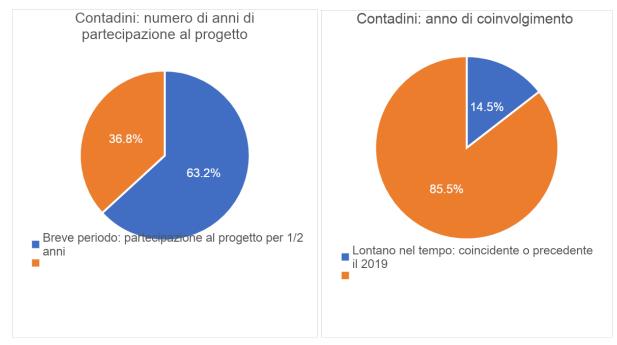
Graph 7: Respondent farmers by number of children

A significant percentage, 27.8%, of the interviewees belong to an ethnic-linguistic minority. This aspect, added to the gender equality, is indicative of the inclusiveness guaranteed by the collaboration with Treedom and local organizations.



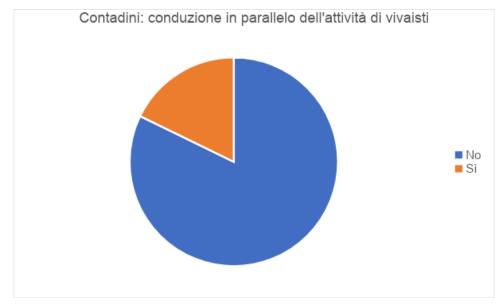
Graph 8: Respondent farmers represented according to whether or not they belong to an ethnic-linguistic minority

The data relating to continuous participation in the project and the length of time of the collaboration with Treedom show that 63.2% of farmers are or have been involved in one of the Treedom projects for a maximum of 1/2 years; and that 85.5% of those interviewed started the collaboration starting from 2020.



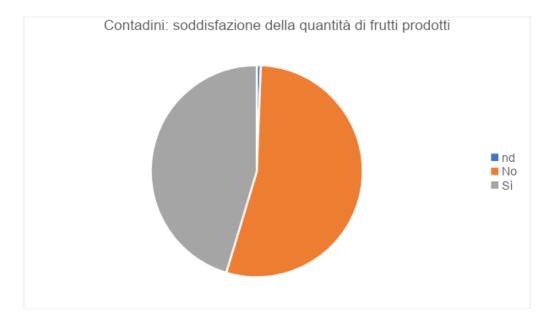
Graph 9: Farmers by number of years of participation in the project and by year of involvement

17.8% of the farmers involved, for the periods of the year that they need it, also work as nurserymen for local organizations. These individuals take care of the plants from the time of sowing and, at this stage, become direct collaborators.



Graph 10: Respondent farmers represented according to their participation or not in nursery activity

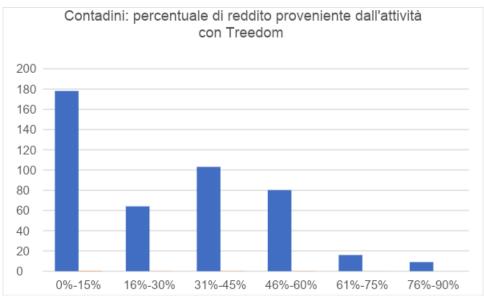
From the production point of view, farmers were directly questioned about their satisfaction with the quantity of fruit produced by the trees planted as part of the Treedom projects. To collect this data, the sample was limited to farmers who had owned fruit or income trees, such as coffee and cocoa, for a sufficient amount of time to ensure the plants entered into normal production. The analysis conducted on 161 responses shows that 45.3% of those interviewed were satisfied with what their trees produced, with an average percentage of sales of 22%.



Graph 11: Farmers' satisfaction with the quantity of fruit produced. The sample represented was restricted to farmers who had owned fruit or income trees for a sufficient time to ensure the normal entry into production of the plants

This data corresponds to the declaration of the percentage of income coming from Treedom's activity which records an incidence greater than 46% for 23.4% of farmers.

involved. This result can be traced back to the data relating to membership and the number of years of participation in Treedom projects, previously described, since it can be conditioned by the length of the period of participation in the same.



Graph 12: Percentage of farmers' family income coming from activity with Treedom

One of the cornerstones of Treedom's projects is certainly training, with a view to *capacity building* of participants and future sustainability of planting projects. Together with the environmental objective, in fact, Treedom's activities aim to generate employment thanks to the increase in skills in sustainable agriculture and the increased autonomy of participants. This intervention model is in line with the 2030 agenda, in particular with objective 4 - Quality education, with particular reference to points 4.3, regarding technical education, and 4.7 regarding education for sustainable development - and with objective 10 - Reduction of inequalities, in points 10.1 and 10.2 on income growth and increased social inclusion.

The importance of technical and professional training initiatives is strongly perceived by stakeholders and perfectly adheres to their priority need, as confirmed by the participation in these activities of 95.9% of the farmers involved.



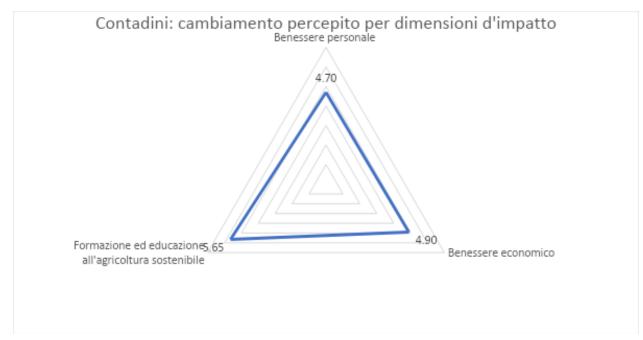
Graph 13: Participation of farmers in training initiatives proposed by the reference partner organisation

Quantifying perceived change

As described above, the dimensions of impact that animate the theoretical framework of reference for farmers are three:**personal well-being,economic well-being,training and education for sustainable agriculture**. In completing the questionnaires, the interviewees were asked to provide an assessment of the change they perceived in relation to the indicators representing each dimension.

Each indicator was then assigned an impact rating (on a scale of 1-7, where 1 indicates a strongly negative impact, 4 no impact, 7 strongly positive impact) as the average value of each respondent's opinions. The average of these values, for each theme and each impact dimension, then defined a unique value of change for each of the latter.

All dimensions appear to be positively perceived in terms of impact, with average values above 4, that is, thanks to the collaboration with Treedom, on average respondents detect positive changes in all the areas investigated. The most impacted dimension is that of **training**, to follow**economic well-being** and finally**personal well-being**. This sequence appears to be in line with the chain of change: first, knowledge and habits are modified, this gives rise to a change in the perception of economic well-being, also considering the direct support received, and the increase in all-round personal well-being comes downstream from this process.



Graph 14: Perceived change by farmers for each of the related impact dimensions

The analysis of the individual indicators reveals a substantial coherence with the impact dimensions to which they refer, demonstrating how the specific aspects have received rather homogeneous evaluations among themselves.

In particular, the size**Personal well-being**records two data that deserve attention. On the one hand, the food seeds supplied to farmers have increased considerably thanks to the collaboration with Treedom, confirming how the projects facilitate access to productive resources and work for the**food safety**, operating within the scope of objective 2 – End hunger

– of the 2030 Agenda. On the other hand, the aspect that receives a lower impact assessment, although still positive since it is higher than the indifference value of 4, is that relating to access to health. The farmers' concern about not being able to meet medical expenses for themselves and their families appears to have slightly decreased. This is a change that is more difficult to implement, probably also considering the current low incidence, described above, of the income from these projects compared to personal needs.

As for the size of **Economic well-being**, which records data close to or above 5 for all indicators, it is necessary to highlight the data relating to "confidence that my agricultural activity will be able to continue in the next five years" and "my ability to save the money I earn", which imply greater economic tranquility regarding the medium term. The two indicators testify to the action and positive contribution of Treedom with respect to the achievement of objectives 1 - Reduce poverty -, 8 - Decent work and economic growth -, 10 - Reduce inequalities - and 12 - Responsible consumption and production.

As highlighted above, the size**Training and education for sustainable agriculture** appears to be the most impacted and presents values higher than 5 for all indicators. Among the most significant, the indicators relating to the aspect of "agroforestry project management capacity" which express the added value of the collaboration with Treedom and local organizations in the development of the activity, thanks to the support provided to farmers and the possibility of integrating other production areas. A radical action that moves with a direct correspondence towards objective 12 – Responsible consumption and production – of the 2030 Agenda. In particular, the indicator "Number of planted species" records a strong change, thanks to the start of the collaboration with Treedom.

The training and education activity carried out by Treedom, thanks to the collaboration with local organizations, generates a significant change in "Environmental awareness" and awareness of the effects of agricultural activity on the environment, in "Management capacity of cultivable space", in "Skills on soil quality" with consequent development of the ability to manage and conserve it in full respect of its peculiarities, in "Knowledge and protection of biodiversity" and awareness of the responsibility to protect and respect the balance between different species, in "Knowledge on prevention of consequences related to extreme climate events" and related ability to adopt appropriate behaviors in relation to specific situations.

These are important actions that operate on the sphere of knowledge and behavior and as such lead to an evolution of the habits of individuals, acting not only in favor of objective 12, but also within the scope of objectives 13 (Combating climate change) with regard to raising awareness of climate change and reducing its impact and 15 (Life on land), supporting the protection of biodiversity.

The way in which training is perceived is an aspect that acquires great relevance because it means that a more autonomous and prepared community is being cultivated and that, thanks to the path of acquiring technical and transversal skills, it can also impact on its growth and on the issue of ethnic groups.

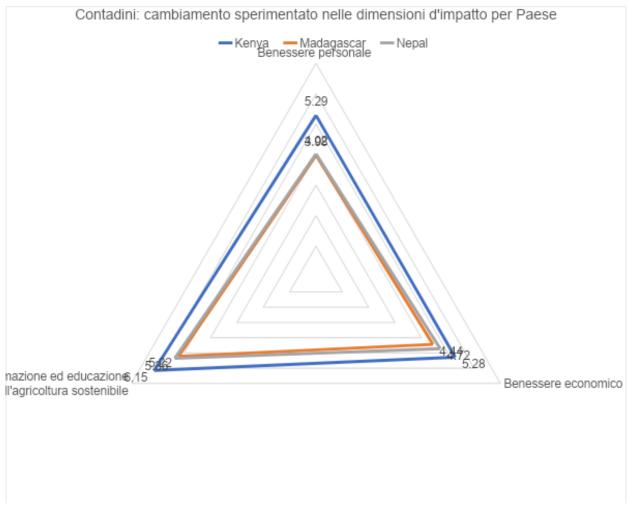
Dsize d'impact	ТОѕрест	THEINDICATOR	THENDEX THEME	THENDEX I WAIT	THENDEX
		Amount of food produced by my plants and available to feed my family	5.00		
	Safety to feed	Variety of food produced by my plants and available for my family's nutrition	4.92	5.14	
		Variation of food seeds provided	5.50		
Well being staff	ell being caff Access to the Health Health I can afford to pay for the doctor if I or someone in my family has health problems or have health insurance		4.92	4.44	4.70
	Health	Worried about not being able to pay for my and my family's medical care	3.97		
	Increase schooling	Less worry about my children's education: I think my family has enough money to pay for a good school	4.52	4.52	
		Percentage of my family's total income that comes from Treedom activity in the last year	4.52		
	Generation of	Change in money earned	4.91	4.57	
Well being	income	I feel like I am financially independent, that is, I have enough money to live comfortably and I don't have to ask anyone for it.	4.30	4.57	
economic		Confidence that my farming business will be able to continue for the next five years	5.73		4.90
	Sustainability financial and cash flow	Ability to organize available money and pay those who work for me is	5.00	5.23	
	Cash now	Ability to buy what my family needs every day	4.96		

	Investments	Ability to save earned money	5.06		
	(small businesses, loans to others farmers)	Since I have been participating in the project, I have been able to make small loans to other farmers or people in the community who needed them for their activities.	4.74	4.90	4.90
		I think the people in the organization I work with will help me solve any agricultural problems.	5.87		
	Ability to management of	Change in the number of plant species	7.00		
	projects	Variation in seedling mortality rate in nursery	5.00	5.75	
	agroforestry	Variation in seedling mortality rate in soil	5.20		
		Integration of other agro-forestry-pastoral activities, beekeeping, aquaculture	5.70		
	Access to the	Variety of new growing tools and technologies I have learned about and used	5.48	E 42	
	technology	Ability to use new tools and technologies for growing that I was previously unaware of	5.38	5.43	
Training and education	Consciousness environmental	Knowledge of the environmental effects (pollution, land use and transformation, land transformation, removal or modification of animal behavior) of my agricultural activities	5.68	5.68	
to agriculture sustainable	Ability to management of the cultivable space (geography)	Knowledge regarding the management of cultivable space (planting, spacing of plants)	5.66	5.66	5.65
	Skills	Awareness of the importance of maintaining and promoting good soil quality	5.76	5.64	
	on the quality of the SOI	Practical knowledge on how to maintain and promote good soil quality	5.51	5.04	
	Knowledge and protection of the	Awareness of the importance of the existence of different forms of plants and animals to ensure natural balance	5.66	5.69	
	biodiversity	Practical knowledge on how to protect biodiversity	5.71		
	Knowledge about prevention of consequences	Awareness of risks related to climate change (extreme events such as floods, tsunamis, landslides, droughts)	5.78	5.68	
	event-related extreme weather	Knowledge of climate risks (extreme events such as floods, tsunamis, landslides, droughts)	5.59		

Table 4: Impact index calculated for each of the themes of the farmers' theoretical framework. Rating scale [1-7], 1 strongly negative impact, 4 no impact, 7 strongly positive impact.

What has been highlighted at a general level is reflected in the**surveys from three different countries** declining in relation to individual specificities.

From the data study, it can be observed that Kenyan farmers have experienced a greater average change than farmers in other areas, as shown in Chart 15. In particular, the impact dimension**Training and education for sustainable agriculture**obtained a very positive value (6.15). This same dimension was also the most positively impacted for Nepal (5.36) and Madagascar (5.22). The dimension**Personal well-being**, in line with the general results, is the one that obtained relatively lower change values, with the minimum average value obtained in the study of the change in Madagascar, where it settled around the indifference level (3.98).



Graph 15: Perceived change by farmers for each of the related impact dimensions, represented by country

Who perceives more change? Significance analysis of the difference between means for the impact dimensions.

The analysis was completed by the**comparison between sub-samples**, relating to the following stakeholder groups:

- Male/Female (see next paragraph);
- Belonging to an ethnic/linguistic minority;
- Presence of minor children;
- Continuity of participation in the activity with Treedom over time;
- Distance in time of collaboration with Treedom;
- □ Age (under 30 / over 30);
- Percentage of family income coming from collaboration with Treedom;

- U Who has trees from *income* Did he improve his income more than others?
- □ Have those who have fruit trees improved their diet more than others?

The aim of this phase of the analysis was to determine which differences existed between the effects detected by the different sub-samples, with reference to the dimensions of impact, and to what extent these differences were significant. In other words, we tried to determine in which groups of sub-samples the impacts detected were more marked, with significant differences between the averages of the effects quantified thanks to the questionnaire.

The results of this analysis are reported in the following tables. Where zero significance is reported ("NO"), it means that the difference between the means is not statistically significant, that is, it is not marked enough to make it possible to characterize the sample subgroups using these aspects. To simplify, it can be thought that, where there is no statistical significance in the difference in the means, the people belonging to the sample subgroups experience substantially similar effects and benefits in relation to the impact dimensions investigated. On the contrary, in the presence of significance, it is possible to state that the two sub-samples experience impacts of different intensity and this difference is attributable to belonging to the group considered. These values are highlighted in bold in the following tables.

THE**farmers belonging to an ethnic-linguistic minority experienced significantly greater changes in the three impact dimensions**, compared to non-members. In other words, the impact resulting from participation in Treedom projects is greater for farmers belonging to an ethnic-linguistic minority who report, on average, greater positive changes than their colleagues, in terms of increasing their personal and economic wellbeing and the training received in the field of sustainable agriculture.

TOMEMBERSHIP OF AN ETHNIC MINORITY-LINGUISTICS					
Impact dimensions	Minority	Not a minority	Significance		
Personal well-being	5.26	4.48	Yes		
Economic well-being	5.42	4.72	Yes		
Training and education for sustainable agriculture	6.58	5.27	Yes		

Table 5: Farmers - Significance of the difference in means based on the demographic characteristic "belonging to an ethnic-linguistic minority"

The farmers**with dependent children**experienced greater and significant changes in the "Personal well-being" and "Training and education for sustainable agriculture" dimensions, compared to those without dependent children.

FCHILDREN IN DEPENDENCE					
Impact dimensions	Dependent children	No dependent children	Significance		
Personal well-being	4.74	4.55	Yes		
Economic well-being	4.96	4.85	No		
Training and education for sustainable agriculture	5.78	5.37	Yes		

Table 6: Farmers - Significance of the difference in means based on the demographic characteristic "dependent children"

The farmers of **age over thirty**experienced significantly greater changes in the three impact dimensions, compared to those under 30.

ANDTY			
Impact dimensions	Under 30	Over 30	Significance
Personal well-being	4.39	4.73	Yes
Economic well-being	4.68	4.96	Yes
Training and education for sustainable agriculture	5.29	5.70	Yes

Table 7: Farmers - Significance of the difference in means based on the demographic characteristic "age"

Farmers who participate or have participated in the project**for at least three years** experienced significantly greater changes in the three impact dimensions than those who participated for one or two years, in line with the timeframes for implementing change.

CPROJECT CONTINUITY(BREV/THELONG PERIOD)			
Impact dimensions	Short term	Long term	Significance
Personal well-being	4.49	5.00	Yes
Economic well-being	4.75	5.22	Yes
Training and education for sustainable agriculture	5.30	6.23	Yes

Table 8: Farmers - Significance of the difference in means based on the demographic characteristic "project continuity"

The farmers who participated in the project**before 2019**experienced a significantly greater change in the "Personal Well-being" impact dimension, while those who participated**after 2019**experienced a significantly greater change in the impact dimension "Training and education for sustainable agriculture", again in line with the timing of the change implementation.

VTIMELINESS OF PARTICIPATION IN THE PROJECT						
Impact dimensions	Distant	Near	Significance			
Personal well-being	4.96	4.63	Yes			
Economic well-being	4.81	4.94	No			
Training and education for sustainable agriculture	4.98	5.76	Yes			

Table 9: Farmers - Significance of the difference in means based on the demographic characteristic "proximity in time of participation in the project"

The extent of the impact appears to be positively correlated with the percentage of income coming from the project activity: farmers whose**income depends for a percentage greater than 30% on the project with Treedom**experienced significantly greater changes in the three impact dimensions than those whose income depends on them for less than 30%.

PPERCENTAGE OF INCOME FROM TREEDOM						
Impact dimensions	<30%	> 30%	Significance			
Personal well-being	4.65	4.68	Yes			
Economic well-being	4.79	4.94	Yes			
Training and education for sustainable agriculture	4.98	5.75	Yes			

Table 10: Farmers - Significance of the difference in means based on the demographic characteristic "percentage of income from Treedom"

The farmers who planted some**income plants**(Coffee, Cocoa, Neem and Ravintsara) experienced a significantly greater increase in income attributable to the activity with Treedom compared to the previous year than farmers who did not plant cash crops.

CHI HAS INCOME TREES HAS IMPROVED THEIR INCOME MORE THAN OTHERS?					
Item	From income Not from income Sig		Significance		
Increase in income compared to the previous year	5.68	4.63	Yes		
attributable to the activity with Treedom	5.00	4.05			

Table 11: Farmers - Significance of the difference in means based on the type of trees received (income/non-income)

The farmers who planted some **fruit plants** experienced a significantly greater increase in the quantity and variety of their own and their family's diets than farmers who did not plant fruit trees.

CHI HAS FRUIT TREES IMPROVED THEIR NUTRITION MORE THAN OTHERS?						
Item	From fruit	Not fruitful	Significance			
Personal and family nutrition integrated thanks to the products of plants grown with Treedom	5.77	4.51	Yes			
Increased Diet Variety Through Increased Income	5.74	4.40	Yes			

Table 12: Farmers - Significance of the difference in means based on the type of trees received (fruit/non-fruit)

Female Empowerment

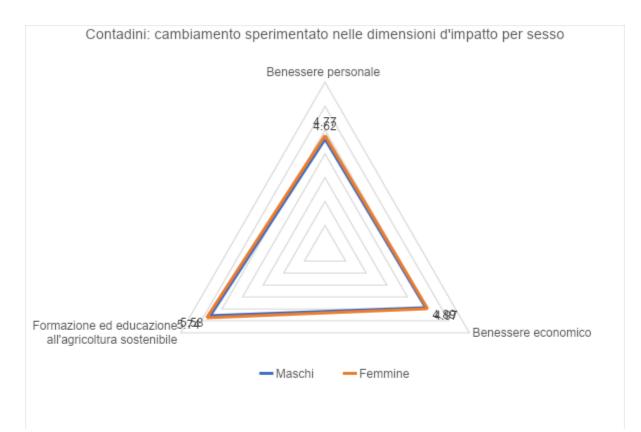
A separate analysis was carried out in relation to the comparison of the change occurred between**women and men**.

Similarly to what was found for the other subpopulations, the aim of this further analysis was to determine what differences existed between the effects detected by the two groups, with reference to both the impact dimensions and the indicators that compose them, and to what extent these differences were significant.

From the table it can be observed that the change in the impact dimensions "Economic wellbeing" and "Training and education for sustainable agriculture" is more significant in the female population and this difference is statistically significant, i.e. not random.

SIT			
Impact dimensions	F	М	Significance
Personal well-being	4.77	4.62	No
Economic well-being	4.97	4.89	Yes
Training and education for sustainable agriculture	5.74	5.58	Yes

Table 13: Farmers - Significance of the difference in means based on the demographic characteristic "gender"



Sex		-				
Dsize d'impact	ТОѕрест	THEINDICATOR	F	м	SIGNIFICATION	
	Safety	Amount of food produced by my plants and available to feed my family	5.10	4.93	NO	
	to feed	Variety of food produced by my plants and available for my family's nutrition	4.95	4.91	NO	
Well being staff	Access to the	I can afford to pay for the doctor if I or someone in my family has health problems or have health insurance	5.00	4.87	YES	
	Health	Worried about not being able to pay for my and my family's medical care	4.08	3.88	YES	
	Increase schooling	Less worry about my children's education: I think my family has enough money to pay for a good school	4.67	4.43	NO	
		Change in money earned	4.95	4.90	YES	
	Generation of income	I feel like I am financially independent, that is, I have enough money to live comfortably and I don't have to ask anyone for it.	4.20	4.38	YES	
	Sustainability financial and cash flow	Confidence that my farming business will be able to continue for the next five years	5.91	5.62	NO	
Well being economic		Ability to organize available money and pay those who work for me is	5.08	4.94	NO	
economic		Ability to buy what my family needs every day	5.02	4.92	YES	
	Investments	Ability to save earned money	5.11	5.02	YES	
		(small ^{businesses,} loans to others farmers)	Since I have been participating in the project, I have been able to make small loans to other farmers or people in the community who needed them for their activities.	4.80	4.69	YES
Training and education to agriculture sustainable	Ability to management of projects agroforestry	I think the people in the organization I work with will help me solve any agricultural problems.	5.98	5.79	NO	
	Access to the	Variety of new growing tools and technologies I have learned about and used	5.64	5.36	YES	

		-		
	Ability to use new tools and technologies for growing that I was previously unaware of	5.49	5.30	YES
Consciousness environmental	Knowledge of the environmental effects (pollution, land use and transformation, land transformation, removal or modification of animal behavior) of my agricultural activities	5.72	5.66	YES
Ability to management of the space cultivable (geography)	Knowledge regarding the management of cultivable space (planting, spacing of plants)	5.69	5.64	YES
Skills	Awareness of the importance of maintaining and promoting good soil quality	5.89	5.68	NO
on the quality of the SOI	Practical knowledge on how to maintain and promote good soil quality	5.60	5.44	YES
Knowledge and	Awareness of the importance of the existence of different forms of plants and animals to ensure natural balance	5.75	5.60	YES
biodiversity	Practical knowledge on how to protect biodiversity	5.79	5.65	YES
Knowledge about prevention of consequences	Knowledge of the environmental effects (pollution, land use and transformation, land transformation, removal or modification of animal behavior) of my agricultural activities	5.88	5.70	NO
event-related climate ^{extremes}	Knowledge regarding the management of cultivable space (planting, spacing of plants)	5.71	5.51	YES

Table 14: Farmers - Significance of the difference in means based on the demographic characteristic "sex", for individual indicators

Local partners

The presentation of the impact results concludes with the data from the analysis conducted on the local Partners, aimed at detecting the demographic characteristics and the impact of Treedom's projects on the four dimensions of change identified for this group of stakeholders.

Personal data

Five organizations were involved in the impact analysis, through focus groups and questionnaires, which, as described in the chapter "_Who2_ Around the world. Impact stakeholder mapping" collaborate with Treedom for the operational implementation of projects in the territories of activity: three in Kenya, one in Nepal and one in Madagascar.

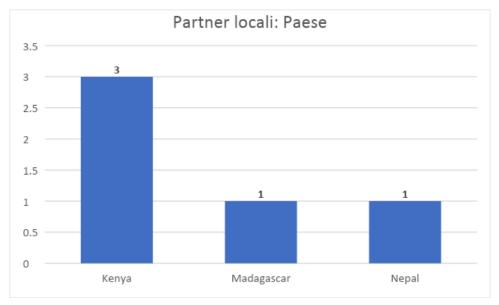
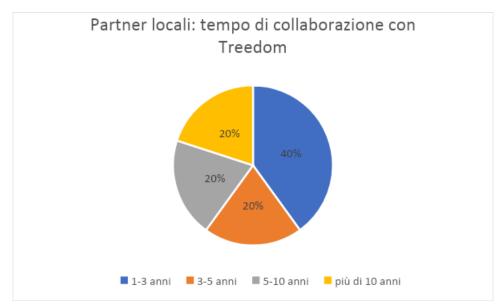


Chart 17: Local partners represented by country

These actors activated the collaboration with Treedom at different times, uniformly representing all the different collaboration time bands examined: 1/3 years (2 organizations), 3/5 years (1 organization), 5/10 years (1 organization), more than 10 years (1 organization).



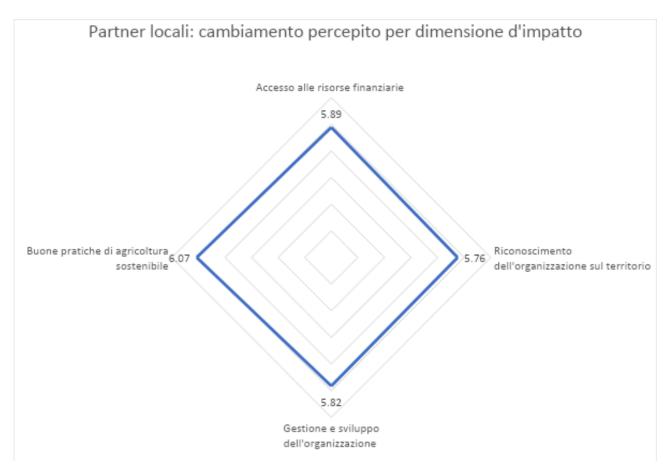
Graph 18: Local partners represented by time of collaboration with Treedom

Quantifying perceived change

The dimensions of impact that characterize the theoretical framework of reference for Local Partners are four: access to financial resources, recognition of the organization in the territory, management and development of the organization, good practices of sustainable agriculture.

The perceived change in relation to the indicators representing each dimension, as detected for the categories of stakeholders presented previously, appears to be positively perceived in terms of impact, presenting average values higher than 5 for this group.

The most impacted dimension is the one relating to<u>Good practices of sustainable agriculture</u>, which concerns the training sector, to follow<u>Organizational Management and Development</u>, <u>Recognition of the organization in the territory</u> and, in closing,<u>Access to financial resources</u>. This sequence appears to be consistent with the chain of change: first of all, knowledge changes, which leads to a change in the management practices of organizations, this generates an acquisition of authority of organizations in the territory which is reflected in an increase in access to financial resources.



Graph 19: Perceived change by local partners for each of the related impact dimensions

The Relevance-Change Matrix.

As part of the questionnaires, respondents were asked to provide an assessment of the relevance of the impact dimensions. By associating the average value assigned by the organizations with the change they perceived, the Relevance – Change matrix was constructed, which therefore provides a synthetic representation of the extent of the perceived change and the importance that this assumes for the stakeholder involved. The matrix has the origin of the axes at the value 4, corresponding to indifference. From the position of the themes within the matrix, concentrated in the upper right quadrant, it can be stated that not only have all the respondents experienced a positive change significantly higher than the indifference value for all the impact dimensions considered, but also that this change is relevant for the organizations.

Good practices in sustainable agriculture is the most impacted and most relevant dimension for organizations and refers to a first-level change in knowledge and skills. Access to financial resources is the dimension with the lowest relevance/change ratio (although the reported change is still very high).

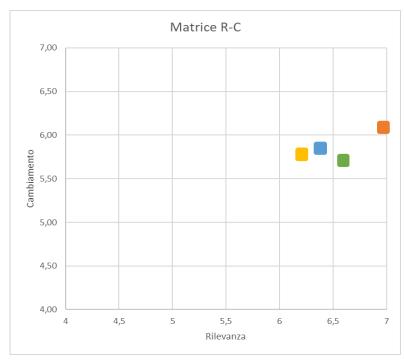


Image 6: Relevance/change matrix

Access to financial resources	
Recognition of the organization in the territory	
Organizational Management and Development	
Good practices of sustainable agriculture	

The analysis of the individual indicators within the impact dimensions considered expresses an extremely positive general trend, showing values between 5.13 (lowest value) and 7 (highest value, detected on two indicators).

The size **Access to financial resources** records a fact that is interesting to reflect on. In terms of financial security, involvement in Treedom projects significantly affects the adequacy and continuity of cash flows, which allow for better planning of activities in the medium/long term. The value of 6.20 for both of these indicators confirms how the collaboration with Treedom operates in a manner consistent with objective 8 - Decent work and economic growth - and objective 17 - Partnership for the objectives - of the 2030 Agenda. On the other hand, it is also interesting to note that, in terms of direct income, the activity within Treedom projects has a proportionally less decisive impact on organizations. This can be traced back to the fact that organizations have a certain degree of productive autonomy with respect to the collaboration with Treedom, as also noted in some indicators analyzed for Partner Personnel.

As for the size **Recognition of the organization in the territory**, it clearly emerges how, in terms of credibility and reputation, the Treedom collaboration has a significant impact on the reputation of the organizations among the farmers with whom it collaborates

(average value 6.20) with a more than positive impact on the increase in the number of individuals or communities interested in participating in its projects (average value 6.80). The organization's recognition as an authoritative and competent point of reference in the territory is a decisive factor in building a solid and autonomous community, capable of self-determination and development. These are indicators that highlight the value of Treedom's contribution, expressing the crucial nature of action plans oriented towards goal 17 for sustainable development -Partnership for the goals.

The size**Organization management and development** records a general average value which is also positive (5.82). In the context of the collaboration with Treedom, the comparison with professionalism, organizational structures and new management methods leads local partners to start a process of internal evolution, integrating assets, procedures and good practices. This results in a significant impact on the different aspects that constitute the impact dimension: in terms of work methodology, the improvement of human resources management (average value 6.20) and a more continuous and effective supervision of agroforestry activities (average value 6.40); while in terms of development of new activities, the ability to start activities in the agroforestry and social sectors. These are indicators that represent actions in line with objectives 8 – Decent work and economic growth –, 12 – Responsible consumption and production – and 15 – Life on land.

For this impact dimension, the indicator regarding the change in the mortality rate of nursery seedlings deserves specific mention. The production activity seems to be already characterized by a high management standard by the organizations, therefore positive changes emerge (5.13) but of a smaller magnitude than the other effects detected.

As highlighted at the beginning of this section, the impact dimension**Good practices of sustainable agriculture**is the one that records the highest general average value (6.07), with the indicators - "Use of organic fertilizers (Self-production where possible)" and "Physical and mechanical weeding (excluding chemical weeding)" - which, recording the maximum attributable value (7), declare the collaboration with Treedom as totally impactful in terms of fertilizer management and control of spontaneous flora.

Involvement in Treedom's projects also affects two other indicators that relate to the area of resources and techniques: "Selection of propagation material (Self-production where possible)" and "Techniques for greater efficiency in the use of water and lower consumption of non-reusable materials". Both with an average value of 6.40, confirm the great value of the training activity carried out by Treedom, consistent with objective 4 - Quality education - and crucial for the pursuit of objectives 12 - Responsible consumption and production - and 15 - Life on land.

DDIMENSION D'IMPACT	ТОѕрест	THEINDICATOR	THENDEX THEME	THENDEX	THENDEX
		Percentage of revenue attributable to activity with Treedom	5.99		
Access to the financial resources	Direct income	Percentage increase in revenue compared to the previous year attributable to activity with Treedom	5.16	5.58	5.89
	Financial Security	The organization's ability and capability to plan activities beyond the short term	6.20	6.20	

		Adequacy of cash flows with respect to project management	6.20		
		Reputation of the organization among the farmers it works with	6.20		
		Reputation of the organization in the local communities in the contexts where it operates	6.00		
	Credibility and reputation on the	Reputation of the organization with public bodies in the contexts in which it operates	5.60	6.08	
Recognition	territory	Reputation of the organization among other organizations in the contexts in which it operates	5.80		
from the organization on territory		Change in the number of farmers or farmer communities interested in participating in the organization's projects in the last year	6.80		5.76
		Increase partnerships with private local entities	5.35		
	Ability to create	Increase partnerships with public bodies	5.65		
	partnerships and	Increase in the number of tenders you participate in	5.20	5.35	
	access tenders	Increased access to accreditations from government bodies or registers (World Food Program, conventions,)	5.20		
		Percentage of trees planted with Treedom compared to the total number of trees planted	6.03		
	Volume of activity	Percentage increase in trees planted with Treedom compared to the previous year	5.51		
	of the organization	Percentage increase in employees thanks to Treedom activity compared to the previous year	5.59	5.62	
		Percentage increase of farmers involved thanks to projects with Treedom compared to the previous year	5.37		
		The collaboration with Treedom has facilitated, within the organization, the improvement of human resources management (organizational efficiency, better contractual treatments, team building and training, etc.)	6.20		
	Methodology of Work	The collaboration with Treedom has facilitated the organization's streamlining of internal procedures	5.40	5.87	
Management and development of the		The collaboration with Treedom has stimulated an increase in the attention placed by the organization on management control (definition of strategic objectives, formalized operational planning, detection of indicators, etc.)	6.00		5.82
organization	Education and	The collaboration with Treedom has facilitated the development and increase of internal organizational skills at the organization	6.00	6.00	
	training	The collaboration with Treedom has facilitated the development and increase of internal technical skills at the organization	6.00	0.00	
	Effectiveness	Variation in mortality rate of seedlings in nursery	5.13	5.46	
		Variation in mortality rate of seedlings in the ground	5.78		
	Continuity in the supervision of the activity	Thanks to the collaboration with Treedom, the organization supervises agroforestry activities more continuously and more effectively.	6.40	6.40	
		New agroforestry activities	6.40		
	New development	New agro-pastoral activities	5.80	5.95	
	activity	New aquaculture activities	5.20	כצ.כ	
		New social activities	6.40		
	Access to the technology	Organization access to tools and technologies following collaboration with Treedom	5.80	5.80	

	Material of propagation	Selection of propagation material (self-production where possible)	6.40	6.40	
	Mechanization	Preference for manual work in agroforestry activities (minimized use of machinery)	5.20	5.20	
	Fertilizers	Use of organic fertilizers (self- production where possible)	7.00	7.00	
	Flora control spontaneous	Physical or mechanical weeding (excluding chemical weeding)	7.00	7.00	
	Defense Products	Use of low environmental impact and, if possible, organic defence products	6.60	6.60	
Good practices of agriculture sustainable	Soil quality	Exclusion of deep work beyond 30 cm (e.g. burying) and use of good practices agronomic (e.g. consociations and/or rotations aimed at maintaining and improving soil fertility)	5.40	5.40	6.07
	Hormones	Exclusion of hormones and other substances that stimulate or accelerate plant growth	5.20	5.20	
	Irrigation	Use of techniques for greater efficiency in water use and reduced consumption of non-reusable materials (e.g. rainwater harvesting and minimising consumption from other sources)	6.40	6.40	
	Post-harvest phase	Exclusion of chemicals for the post-harvest phase	5.40	5.40	

Image 7: Impact index calculated for each of the themes of the theoretical framework of the partner organizations. Rating scale [1-7], 1 strongly negative impact, 4 no impact, 7 strongly positive impact.

Analyzing the impact dimensions by country, it can be observed that Kenya and Madagascar have experienced the greatest changes, with the former perceiving an average change in the four dimensions of 6.22. In particular, Kenyan organizations have experienced a significant increase in territorial recognition (6.43), an aspect also highlighted in the focus groups, but paradoxically a change of lesser proportions in good sustainable agriculture practices (5.85), which at an aggregate level instead appears to be the most impacted dimension. This dimension obtained the highest value in Nepal (6.22) and the second highest value in Madagascar (6.56), following only access to financial resources (6.70). For Nepal, the improvement in good sustainable agriculture practices is the only dimension that has experienced a significantly positive change, while the others have obtained values at or very close to indifference.

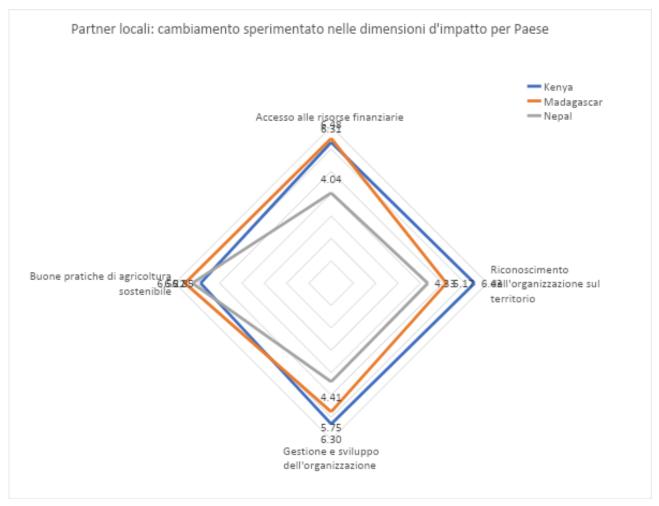


Figure 8: Perceived change by local partner organisations for each of the relevant impact dimensions, represented by country

_How Much_Welcome to the jungle. The results

Partner Staff

The third category of stakeholders involved was that of Partners' Personnel, with the aim of understanding the distinctive characteristics and effects generated by the employment and collaboration with Treedom, in relation to the three impact dimensions outlined for this stakeholder. The following data concerns organizations operating in Kenya and Madagascar as the peculiarities of the Nepalese regulatory context and the resulting business model adopted by the organizations to operate in the country meant that it was not possible to directly involve the staff of the partners in Nepal. In order to work in Nepal, in fact, third sector organizations must be registered with the Social Welfare Ministry Register and therefore must have a Nepalese business name. For this reason, the Italian organization Asia, Treedom's local interlocutor, must rely on local partners to implement the operational part of the activities. This prevents direct contact with individual members of the organizations' staff and the impossibility of collecting data relating to this category of stakeholders.

Personal data

42 people working for organizations in Kenya and Madagascar responded to the questionnaire. There is a significant prevalence of the former (78.6%), since they belong to three different organizations, compared to the only Malagasy interlocutor Tsiryparma.

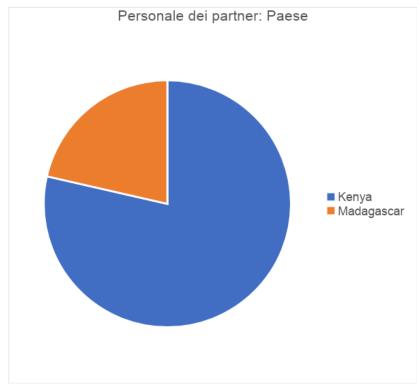


Chart 20: Partner staff represented by country

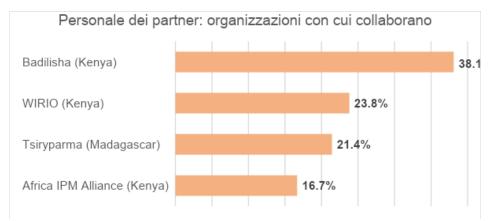


Chart 21: Partner staff represented by organisations they collaborate with

In line with the nature and characteristics of Treedom's projects in the territories under analysis, the members of the organizations involved are predominantly agroforestry technicians (47.6%) and then trainers/educators (16.7%). These are therefore personnel engaged in the two main directions on which Treedom operates: planting and training, while the minority of respondents hold managerial or support roles (35.7%).



Chart 22: Partner staff represented by role held within the organization

In the analysis of the demographic characteristics that emerged from the questionnaire responses, it is interesting to note how, also for this group of stakeholders, we operate consistently with goal 5 of the 2030 Agenda – Gender equality – involving men and women in a fairly balanced way. The data highlights that in the realities with which Treedom collaborates, access to professional opportunities, albeit in mostly traditional and rural contexts, is not conditioned by gender issues.

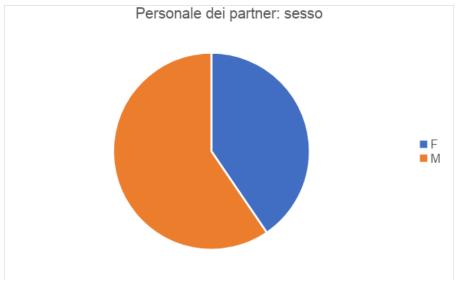


Chart 23: Partner staff represented by gender

An equally significant figure is the distribution of the personnel involved in this analysis among the different age groups. Contrary to what happens for farmers who are mostly concentrated in the "highest productivity" age group (31-50 years), 69.1% of the staff members of the organizations are in the 26-30 age group. This figure highlights a relatively low threshold for entry into the world of work (confirmed by the 9.5% who are between 18 and 25 years).

52.4% of the interviewees are married with dependent children, with a significant proportion of families consisting of 2 to 4 children (50% of the interviewees).

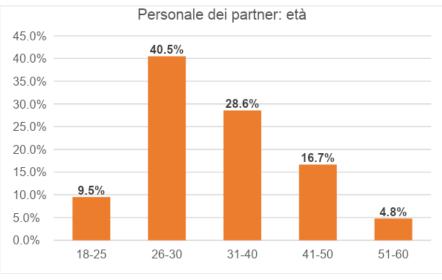


Chart 24: Partner staff represented by age

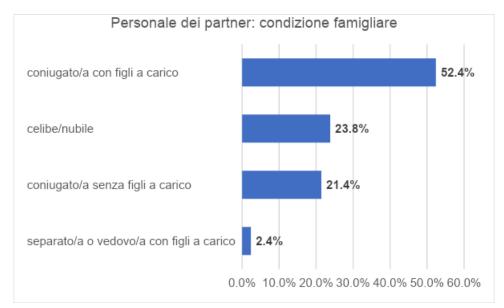


Chart 25: Partners' staff represented by family status

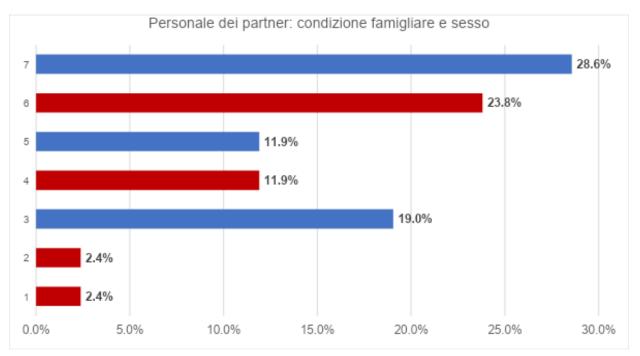


Chart 26: Partners' personnel represented by family status and gender

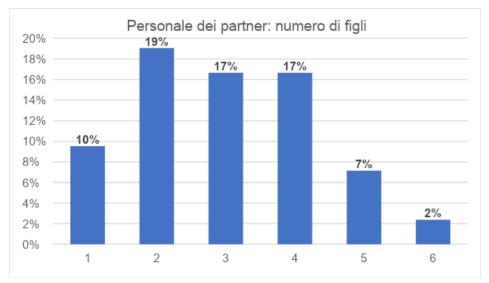
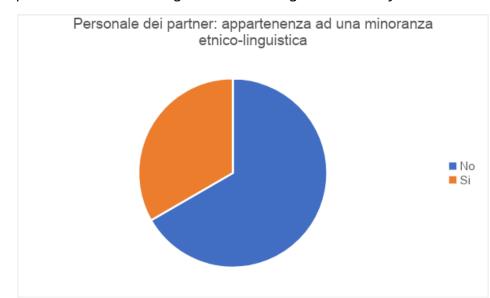


Chart 27: Partners' staff represented by number of children



66.7% of respondents do not belong to an ethnic-linguistic minority.

Chart 28: Partner staff represented according to whether or not they belong to an ethnic-linguistic minority

The data relating to the length of service of the interviewees, who in 61.9% of cases have been collaborating with the organizations for more than 3 years₂, describes a stable work scenario and solid relationships of trust and collaboration.

²The collaboration is considered long-term if it lasts more than 3 years, short-term if it lasts less than 3 years.



Chart 29: Partner staff represented by length of employment in the organisation

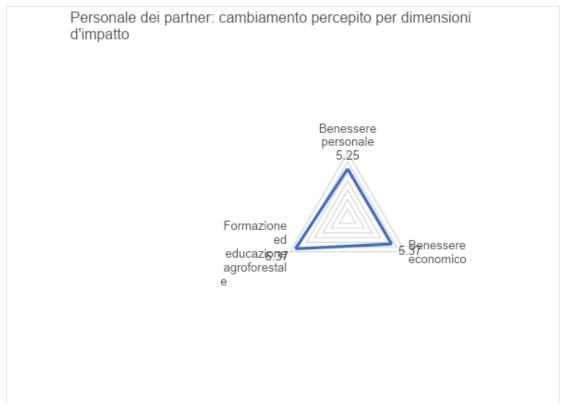
Quantifying perceived change

As illustrated above, the impact dimensions that animate the theoretical framework of reference for Partners' Personnel are three:<u>personal well-being</u>,<u>economic well-being</u>,<u>agroforestry training and education</u>.

As part of the questionnaires, interviewees were asked to provide an assessment of the change they perceived in the indicators representing each dimension.

By calculating the average of the ratings assigned to the themes, it was possible to define a unique value of change for each single impact dimension. It emerged that all the dimensions, as detected for the Farmers, are positively perceived in terms of impact, presenting average values higher than the indifference value (4). The most impacted dimension is that of training, followed by economic well-being and finally personal well-being. This sequence appears to be in line with the chain of change, as well as with what was detected by the farmers involved: knowledge and habits are the most immediate and direct that can be changed, followed by the perception of economic well-being, also considering the direct support received. Personal well-being, on the other hand, is a much more complex dimension to change, due to its complex and individual nature and only comes downstream of this process, therefore with a perception of impact of lesser intensity.

In general, all three impact dimensions reveal very high values of change, even more than for farmers, probably as a consequence of the very nature of the working relationship, which involves a daily, close and constant relationship between the parties.



Graph 30: Perceived change by local partner staff for each of the relevant impact dimensions

The analysis of the individual indicators within the impact dimensions considered reveals a substantial coherence of the former with the average values, without detecting significant deviations.

As for the size**Personal well-being**, as for farmers, the aspect that records the highest score is the one related to food security (5.76), highlighting how the employment guaranteed by the partners has positively influenced the possibility of having the adequate variety and quantity of food for the employees. On the other hand, the component of concern related to access to health is instead the one pertaining to the area of personal well-being that presents a lower score and close to the indifference value (average value: 4.14). In parallel with the analysis of the change perceived by the Farmer stakeholders, it is interesting to note how this indicator records for both groups of stakeholders the lowest average value in terms of perception of change. It seems reasonable to assume that the concern related to medical/ health aspects is less contrastable with economic stability and security, compared to the other components.

The size**Economic well-being**it is positively populated from the point of view of impact since it records data higher than 5 for all indicators, except for one indicator. It is important to highlight, in fact, that the perceived change "in the ability to cover my and my family's daily expenses" is lower than that of all the others, although it remains positive with an average value of 4.98.

As highlighted above, the size **Agroforestry training and education** appears to be the most impacted and presents, for all indicators, values higher than 6. The

respondents report having found a point of reference in the forestry managers in charge of Treedom (6.33), in line with objective 17 – Partnership for the objectives – of the 2030 Agenda, in its point 17.9 regarding international support and North-South cooperation in the world.

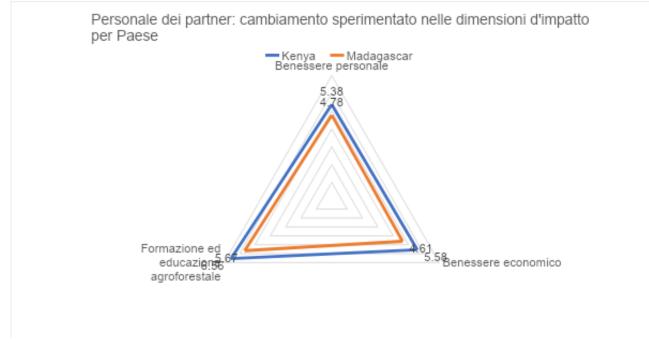
The training and education activity carried out by Treedom generates a significant change in "Skills on soil quality", "Knowledge and protection of biodiversity" and "Knowledge on prevention of consequences related to extreme climate events". These are important actions that operate on the sphere of knowledge and development of awareness on the importance of central themes for one's community and which as such lead to an evolution of the habits of individuals, acting within the scope of objectives 13 – Fight against climate change, with regard to raising awareness of climate change and reducing its impact, – and 15 – Life on Earth, supporting the protection of biodiversity.

Dsize D'IMPACT	ТОѕрест	THEindicator		THENDEX	THENDEX
	Food safety	Quantity and variety of my and my family's food	5.76	5.76	
Well being	Access to health	I can afford to go to specialists if I or a member of my family has health problems or have health insurance	5.69	4.92	5.25
staff		Worried about not being able to pay for my and my family's medical care	4.14		
	Increased schooling	Less worry about my children's education: I think my family has enough money to pay for a good school	5.40	5.40	
		Percentage of my family's total income that comes from project work in the last year	5.50		
	Income generation	Change in money earned	5.38	4.45	
Well being	income generation	I feel like I am financially independent, that is, I have enough money to live comfortably and I don't have to ask anyone for it.	5.48		5.37
economic	Financial sustainability and cash flow	Ability to cover my and my family's daily expenses	4.98	4.98	
		Ability to save earned money	5.60		
	Investments (small businesses, loans to other farmers)	Since I have been participating in the project, I have been able to make small loans to other farmers or people in the community who needed them for their activities.	5.29	5.44	
	Agroforestry project management skills	I think that the Treedom contacts (Forestry Manager) will help me to solve any agricultural problems	6.33	6.33	
Training and	Access to technology	Variety of new tools and technologies (e.g. GPS mapping and photography) that I have learned about and used	6.17	6.17	
Training and education agroforestry	Skills on soil quality	I am aware of the importance of preserving and promoting good soil quality	6.48	6.48	6.37
	Knowledge and protection of biodiversity	I am more aware of the importance of preserving biodiversity	6.40	6.40	
	Knowledge about prevention of consequences related to extreme weather events	It is important to know the risks related to extreme weather events and climate change	6.48	6.48	

Table 15: Impact index calculated for each of the themes of the theoretical framework of the partners' staff. Rating scale [1-7], 1 strongly negative impact, 4 no impact, 7 strongly positive impact.

What has been highlighted at a general level is reflected in the findings**on the two different countries** declining in relation to individual specificities.

Again, as noted for the Farmers stakeholder group, it can be observed that the staff of the Kenyan organizations experienced a greater change than the Madagascar staff, in all impact dimensions (average delta 0.82), as evidenced by the larger size of the blue triangle in graph 31. In particular, the impact dimension **Agroforestry training and education**obtained a very positive value in both countries (6.56 and 5.67). As regards Kenya, the size**Personal well-being**is the one that obtained relatively lower change values (5.38), while as regards Madagascar, the least impacted dimension was the **Economic well-being**.



Graph 31: Perceived change by local partner staff for each of the relevant impact dimensions, represented by country

Who Perceives More Change? Significance Analysis of Difference Between Means for Impact Dimensions

The analysis was completed by comparing**sub-samples**, relating to the following stakeholder groups:

- □ Male/Female (see next paragraph);
- Belonging to an ethnic/linguistic minority;
- Presence of minor children;
- □ Continuity of collaboration with Treedom;
- □ Age (under 30 / over 30);
- U Village;
- □ Role.

The aim of this phase of the analysis was to determine what differences exist between the effects detected by the different sub-samples, with reference to the impact dimensions, and to what extent

such differences were significant. In other words, we tried to determine on which groups of sub-samples the impacts detected were more marked, with significant differences between the means of the effects quantified thanks to the questionnaire.

The results of this analysis are reported in the following tables, in bold are highlighted the values relating to the stakeholder groups that report a greater and statistically significant change compared to the other group examined. As for the farmer stakeholder, where the absence of significance is reported ("No") it means that the difference between the means is not statistically significant, or is not marked enough to make it possible to characterize the sample subgroups using these aspects. For further information on the meaning of statistical significance of the difference in means, refer to the analogous paragraph in the chapter on farmers (page 27)

The staff of the staff belonging to a**ethnic-linguistic minority**experienced significantly greater changes in the Sustainable Agriculture Education and Training impact dimension than non-ethnic-linguistic minority staff. However, non-ethnic-linguistic minority staff experienced significantly greater change than non-ethnic-linguistic minority staff in the Personal Well-being dimension.

TOMEMBERSHIP OF AN ETHNIC MINORITY-LINGUISTICS						
Impact dimensions	Minority	Not a minority	Significance			
Personal well-being	4.70	5.53	Yes			
Economic well-being	5.17	5.47	No			
Agroforestry training and education	6.73	6.19	Yes			

Table 16: Partner staff - Significance of the difference in means based on the demographic characteristic "belonging to an ethnic-linguistic minority"

As can be seen from the following tables, in relation to the aspects of **presence of minor children**, continuity of collaboration with Treedom, age and role covered within the organization, the differences between the averages**they are not significant**.

FCHILDREN IN DEPENDENCE			
Impact dimensions	Dependent children	No dependent children	Significance
Personal well-being	5.27	5.21	No
Economic well-being	5.33	5.46	No
Agroforestry training and education	6.43	6.23	No

Table 17: Partners' staff - Significance of the difference in means based on the demographic characteristic "dependent children"

CCONTINUOUSNESS OF INDIRECT COLLABORATION WITH TREEDOM (BREV/THELONG PERIOD)					
Impact dimensions	Short term	Long term	Significance		
Personal well-being	5.06	5.37	No		
Economic well-being	5.14	5.51	No		
Agroforestry training and education	6.25	6.45am	No		

Table 18: Partner staff - Significance of the difference in means based on the demographic characteristic "continuity of indirect collaboration with Treedom"

ANDTY						
Impact dimensions	Under 30	Over 30	Significance			
Personal well-being	5.08	5.42	No			
Economic well-being	5.24	5.50	No			
Agroforestry training and education	6.24	6.50	No			

Table 19: Partner staff - Significance of the difference in means based on the demographic characteristic "age"

Ruolo						
Impact dimensions	Agroforestry technician or trainer	Support role	Significance			
Personal well-being	5.29	5.18	No			
Economic well-being	5.25	5.58	No			
Agroforestry training and education	6.39	6.35	No			

Table 20: Partner staff - Significance of difference in means based on the characteristic "role held in the organization"

Staff members of Kenyan organizations collaborating with Treedom experienced significantly greater change in the three dimensions of impact than staff members of the organization present in Madagascar.

PAESE						
Impact dimensions	Kenya	Madagascar	Significance			
Personal well-being	5.38	4.78	Yes			
Economic well-being	5.58	4.61	Yes			
Agroforestry training and education	6.56	5.67	Yes			

Table 21: Partner staff - Significance of the difference in means based on the demographic characteristic "Country"

Female Empowerment

A separate analysis was carried out in relation to the comparison of the change that occurred between women and men.

Similarly to what happened in the analysis of the subpopulations, the aim of this further study was to determine what differences existed between the effects detected by the two groups, with reference to both the impact dimensions and the indicators that compose them, and to what extent these differences were significant.

In Table 22 it can be observed that the female population experienced a greater change on the three impact dimensions than the male population but that this change does not appear to be structural, as it is not statistically significant.

As regards the individual indicators of change, the significance of the difference in the averages emerges on the perception of economic independence and on the increase in the ability to cover daily personal and family expenses resulting from the collaboration with Treedom. In both cases, it is the subsample of female collaborators that reports higher impact indices and therefore greater positive change (0.68 pt. and 1.23 pt. respectively).

SIT			
Impact dimensions	F	М	Significance
Personal well-being	5.49	5.09	No
Economic well-being	5.59	5.22	No
Agroforestry training and education	6.46	6.31	No

Table 22: Partner staff - Significance of the difference in means based on the demographic characteristic "gender"

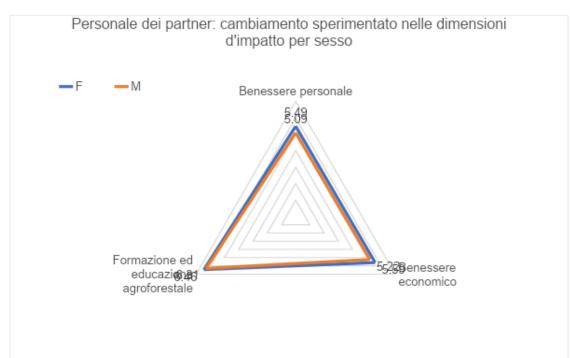


Chart 32: Change experienced by partner staff in impact dimensions by gender

Sex					
Dsize d'impact	ТОѕрест	THEINDICATOR	F	М	SIGNIFICATION
Well being staff	Food safety	Quantity and variety of my and my family's food	5.76	5.76	NO
	Access to health	I can afford to go to specialists if I or a member of my family has health problems or have health insurance	5.88	5.56	NO
		Worried about not being able to pay for my and my family's medical care	4.71	3.76	NO
	Increase schooling	Less worry about my children's education: I think my family has enough money to pay for a good school	5.59	5.28	NO
Well being economic	Income generation	Percentage of my family's total income that comes from project work in the last year	5.59	5.44	NO
		Change in money earned	5.41	5.36	NO
		I feel like I am financially independent, that is, I have enough money to live comfortably and I don't have to ask anyone for it.	5.88	5.20	YES
	Financial sustainability and cash flow	Ability to cover my and my family's daily expenses	5.71	4.48	YES
	Investments (small businesses, loans to other farmers)	Ability to save earned money	5.53	5.64	NO
		Since I have been participating in the project, I have been able to make small loans to other farmers or people in the community who needed them for their activities.	5.41	5.20	NO
Training and education agroforestry	Agroforestry project management skills	I think that the Treedom contacts (Forestry Manager) will help me to solve any agricultural problems	6.47	6.24	NO
	Access to technology	Variety of new tools and technologies (e.g. GPS mapping and photography) that I have learned about and used	6.24	6.12	NO
	Skills on soil quality	I am aware of the importance of preserving and promoting good soil quality	6.53	6.44	NO

Knowledge and protection of biodiversity	I am more aware of the importance of preserving biodiversity	6.47	6.36	NO
	It is important to know the risks related to extreme weather events and climate change	6.59	6.40	NO

Graph 33: Partner staff - Significance of the difference in means based on the demographic characteristic "gender", for individual indicators

Conclusions and future developments

In light of the analysis carried out, it appears evident that Treedom, through its activity and its network of collaborations, generates positive effects on its stakeholders that are relevant from an impact point of view.

The perceived changes are almost all positive for the stakeholders involved, as all the indicators have reached an impact index higher than the indifference threshold (4). For the**farmers**the most impacted dimension is that of the**training**, to follow the **economic well-being** and finally the**personal well-being**.

The impact on the "capacity to manage agroforestry projects" expresses the added value of the collaboration with Treedom and local organizations in the development of the activity, thanks to the support provided to farmers and the possibility of integrating other production areas. Furthermore, the training and education activity carried out by Treedom, thanks to the collaboration with local organizations, generates a significant change in "Environmental awareness" and awareness of the effects of agricultural activity on the environment, in "Capacity to manage cultivable space", in "Skills on soil quality" with consequent development of the ability to manage and conserve it in full respect of its peculiarities, in "Knowledge and protection of biodiversity" and awareness of the responsibility to protect and respect the balance between different species, in "Knowledge on prevention of consequences related to extreme climate events" and related ability to adopt appropriate behaviors in relation to specific situations. These are important actions that operate on the sphere of knowledge and behavior and as such lead to an evolution of the habits of individuals, also acting on the social dimension. Personal well-being and on the Economic well-being, specifically, in relation to "confidence that my agricultural activity will be able to continue for the next five years" and "my ability to save the money I earn", which imply greater economic peace of mind in the medium term.

What has been highlighted at a general level is reflected in the**surveys from three different countries**declining in relation to the individual specificities. From the study of the data, it can be observed that Kenyan farmers have experienced a greater average change than farmers in other areas. In particular, in the impact dimension**Training and education for sustainable agriculture** . The size **Personal well-being**, in line with the general results, is the one that obtained relatively lower change values, with the minimum average value obtained in the study of the change in Madagascar, where it settled around the indifference level. The analysis also determined the differences between the effects detected by different sub-samples, with reference to the impact size, and to what extent these differences were not only marked but also significant.

In particular, it emerged that farmers who:

- **belong to an ethnic-linguistic minority**experienced significantly greater changes in the three impact dimensions than those who did not;
- have dependent children experienced greater and significant changes in the "Personal well-being" and "Training and education for sustainable agriculture" dimensions, compared to those without dependent children;
- I am from**age over thirty**experienced significantly greater changes in the three impact dimensions, compared to those under 30;
- participate or have participated in the project for at least three years experienced significantly greater changes in the three impact dimensions than those who participated for one or two years;
- participated in the project before 2019 experienced a significantly greater change in the "Personal Well-being" impact dimension, while those who participated after 2019 experienced a significantly greater change in the impact dimension "Training and education for sustainable agriculture;
- they have aincome dependent on the project with Treedom for a percentage greater than 30% experienced significantly greater changes in the three impact dimensions than those whose income depends on them for less than 30%.
- they planted some income plants (Coffee, Cocoa, Neem and Ravintsara) experienced an increase in income attributable to the activity with Treedom compared to the previous year significantly greater than farmers who did not plant cash crops;
- they planted some **fruit plants** experienced a significantly greater increase in the quantity and variety of their own and their family's diets than farmers who did not plant fruit trees.

A separate analysis was carried out in relation to the comparison of the change occurred between **women and men**. In this case, the change in the impact dimensions "Economic well-being" and "Training and education for sustainable agriculture" is more significant in the female population and this difference is statistically significant, i.e. not random.

As regards the**partner organizations**The most impacted dimension is the one relating to**Good practices of sustainable agriculture**, which concerns the training sector, to follow**Organizational Management and Development**,**Recognition of the organization in the territory** and, in closing,**Access to financial resources**. Also in this case, the sequence appears to be consistent with the chain of change: first of all, knowledge is modified, which leads to a change in the management practices of organizations, this generates an acquisition of authority of the organizations in the territory which is reflected in an increase in access to financial resources. In particular, in the dimensionAccess to resources in in terms of financial security, involvement in Treedom's projects appears to significantly impact the adequacy and continuity of cash flows, which allow for better planning of activities in the medium/long term. While for the size **Recognition of the organization in the territory**, it clearly emerges how, in terms of credibility and reputation, the Treedom collaboration has a significant impact on the reputation of the organizations among the farmers with whom it collaborates, with a more than positive impact on the increase in the number of individuals or communities interested in participating in its projects. The recognition of the organization as an authoritative and competent point of reference in the territory is a decisive factor for the construction of a solid and autonomous community, capable of self-determination and development. As regards the size Organization management and development the comparison with professionalism, organizational structures and new management methods leads local partners to start a process of internal evolution, integrating assets, procedures and good practices, in terms of work methodology, the improvement of human resources management and a more continuous and effective supervision of agroforestry activities as well as the ability to start activities in the agroforestry and social fields

When analyzing the impact dimensions by country, it was observed that organizations in Kenya and Madagascar experienced the greatest changes. In particular, Kenyan organizations experienced a significant increase in territorial recognition but paradoxically a smaller change in good sustainable agriculture practices, which obtained the highest value in Nepal and the second highest value in Madagascar. Finally, for Nepal, the improvement in good sustainable agriculture practices is the only dimension that experienced a significantly positive change, while the others obtained values at or very close to indifference.

Even in the case of the organizations' staff, the most impacted dimension is that of training, followed by economic well-being and finally personal well-being and in general, all three impact dimensions have revealed very high values of change, even more than for farmers, probably as a consequence of the very nature of the working relationship, which involves a daily, close and constant relationship between the parties. In particular, the respondents report having found a point of reference in the forestry managers in charge of Treedom and agroforestry training and education activity carried out by Treedom has generated a significant change in "Skills on soil quality", "Knowledge and protection of biodiversity" and "Knowledge on prevention of consequences related to extreme climate events". These are important actions that operate on the sphere of knowledge and development of awareness on the importance of central themes for one's community and which as such lead to an evolution of the habits of individuals. In the dimension**Personal well-being**, as well as for farmers, the aspect that recorded the highest score is the one related to food security, highlighting how the employment guaranteed by the partners has positively influenced the possibility of having the adequate variety and quantity of food for the employees. On the other hand, the component of concern related to access to health is instead that pertaining to the area of

personal well-being that has a score lower and closer to the indifference value. The dimension **Economic well-being** it is positively populated from the point of view of impact since it records data above 5 for all indicators, with the exception of the perceived change "in the ability to cover my and my family's daily expenses" which is lower than that of all the others although it remains positive. What is highlighted at a general level is reflected in the surveys**on different countries** declining in relation to individual specificities.

Again, as noted for the Farmers stakeholder group, it can be observed that the staff of the Kenyan organizations experienced greater change than those in Madagascar, across all dimensions of impact.

Even for the staff of the organizations, an attempt was made to determine on which subsamples of the population the impacts detected were more marked and significant. From this analysis it emerged that the staff belonging to a**ethnic-linguistic minority** experienced significantly greater changes in the Sustainable Agriculture Education and Training impact dimension than non-ethnic-linguistic minority staff. However, non-ethniclinguistic minority staff experienced significantly greater change than non-ethniclinguistic minority staff in the Personal Well-being dimension.

Finally, a separate analysis was carried out in relation to the comparison of the change occurred between **women**And**men**. In this case, it can be observed that the female population has experienced a greater change on the three dimensions of impact than the male population with particular reference to the perception of economic independence and the increase in the ability to cover personal and family daily expenses resulting from the collaboration with Treedom.

In conclusion, the**methodology**applied has allowed the shared creation of a**framework**of evaluation of changes on relevant stakeholders from an impact point of view, not self-referential, which in its application has appeared**robust**and**effective**.

The collection tools were designed and implemented with the support of local referents and the level of response appeared sufficient for all the countries where the experimentation took place.

In the **future**, it will be interesting **to expand** the basis of investigation, integrating the framework into existing monitoring systems and involving other countries, to obtain a continuous and longitudinal analysis of all Treedom projects.

In this way, it will be possible to evaluate over time and in different contexts the effects generated by the activities on knowledge, skills, attitudes and behaviours, describe these changes and communicate them to their**supporters** and stakeholders.

Furthermore, these assessments may be a useful tool available to Treedom to evaluate the evolution of needs and take**decisions**strategic, technical and operational to develop their activities in a conscious and impact-oriented manner.