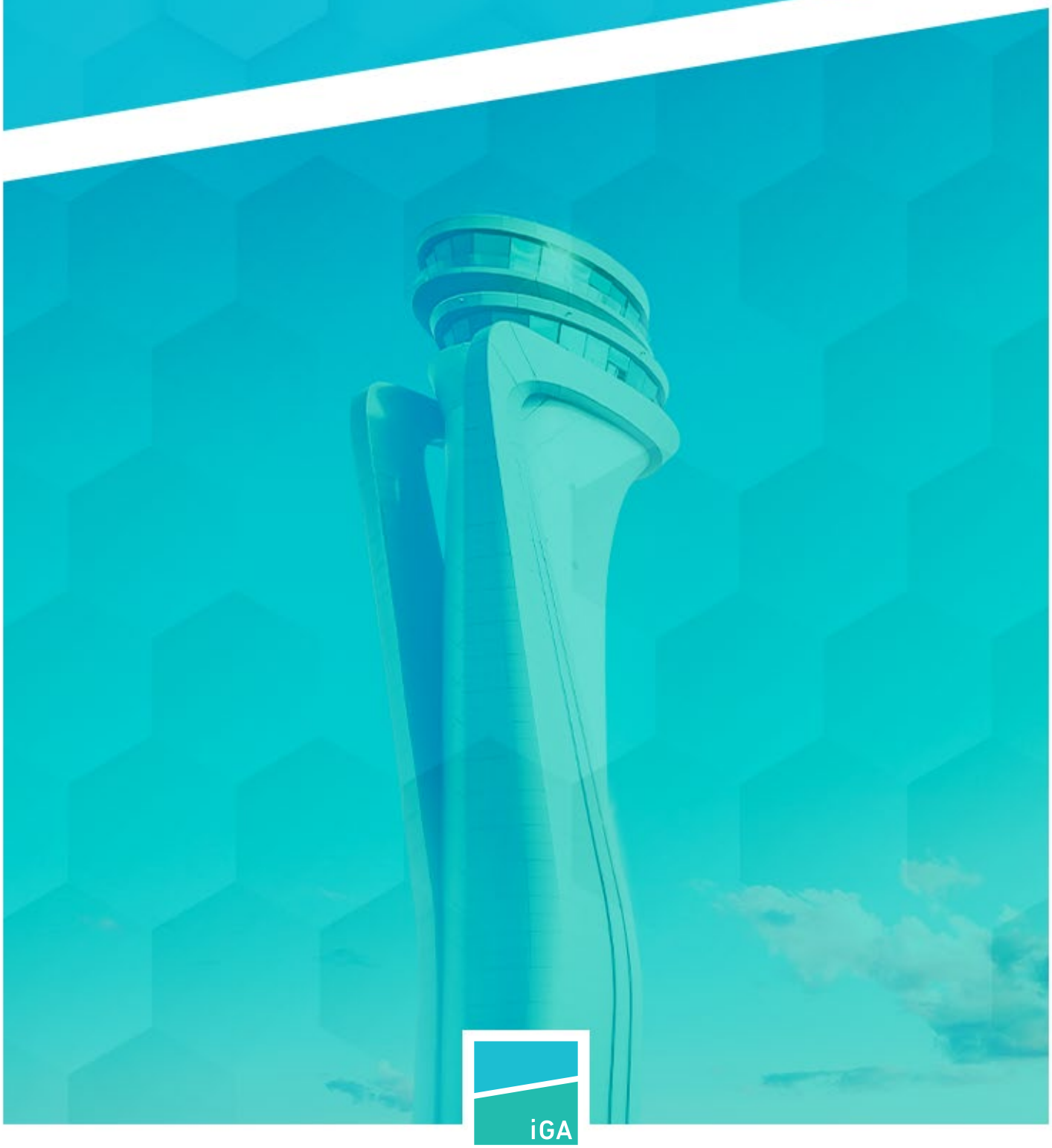
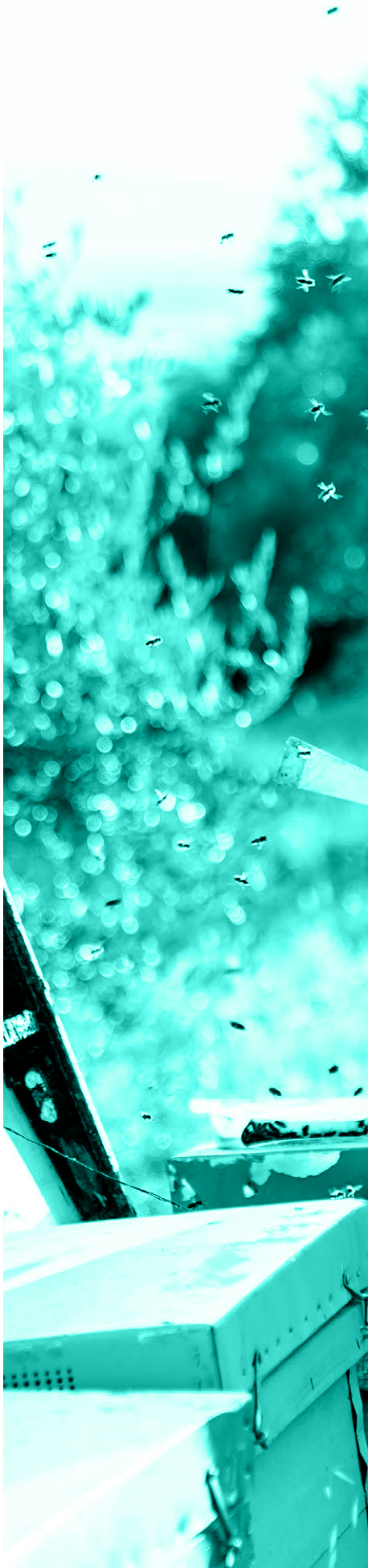
Beekeeping Project

SROI Analysis



iGA

CONTENTS



orika sustainability

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ABOUT iGA

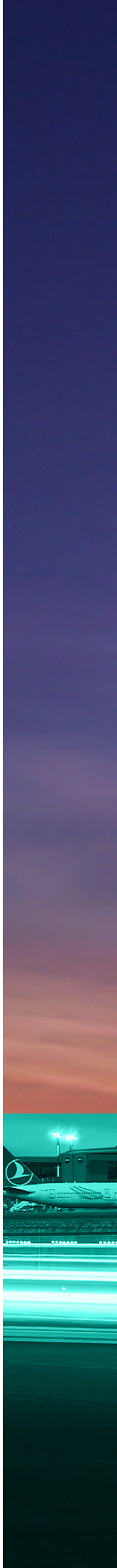
Established on October 7, 2013, Istanbul Grand Airport (iGA) is positioned as Turkey's gateway to the world and a prominent global aviation hub, designed to accommodate flights to over 300 destinations and serve up to 200 million passengers annually. iGA's overarching mission is to become the most efficient and esteemed cargo logistics provider, ensuring the safety and comfort of passengers throughout their travel journey.

As a pivotal aviation infrastructure in Turkey, iGA not only facilitates seamless travel experiences but also fosters inclusivity by bringing together diverse individuals within its premises, creating unique and memorable encounters. By doing so, iGA strives to contribute to Turkey's economic prosperity and strategic positioning directly and indirectly on the global stage.

One of iGA's core objectives is to establish an exemplary model of sustainable airports and cities, aiming to reduce environmental impact while enhancing the travel experience and fostering the welfare of its stakeholders through positive social contributions.

Aligned with international and national priorities, iGA actively works towards generating positive social impact and fostering societal development. This is achieved through a participatory, sustainable, environmentally friendly, and egalitarian approach. A dedicated team of experts is involved in projects that measure the social impact of iGA's operations, while the Community Liaison Officer (CLO) serves as the primary point of contact for effective communication and engagement with local communities.

iGA's commitment to social responsibility extends beyond the realm of aviation, emphasizing the importance of holistic development, environmental stewardship, and community well-being. By integrating sustainable practices and engaging with stakeholders, iGA strives to shape a prosperous and harmonious future for all.




TURKISH AIRLINES

ABOUT THE REPORT

This analysis focuses on measuring the impact of iGA's Beekeeping Project, an ongoing project that was initiated in 2022. The evaluation utilizes the Social Return on Investment (SROI) analysis as a framework, which is based on eight fundamental principles that are applied throughout the entire report. Adhering to these principles, the report provides transparent information regarding the measurement of the Project's social impact.

The SROI framework allows for a comprehensive assessment of the Beekeeping Project's outcomes, taking into account not only the financial returns but also the social benefits generated by the initiative. By analyzing the social value created by the Project, the SROI approach provides a holistic understanding of its overall impact on the community and stakeholders involved.

Transparency plays a pivotal role in this analysis, ensuring that all relevant data and findings related to the social impact measurement are disclosed. By presenting the information in a transparent manner, stakeholders and interested parties can gain insights into the Project's effectiveness and contributions to the well-being of the community.

The SROI analysis considers various dimensions of social impact, including economic, environmental, and social aspects. It aims to quantify and monetize the social benefits generated by the Beekeeping Project, allowing for a comprehensive evaluation of its value to society. By applying this robust evaluation framework, iGA can gain a deeper understanding of the Project's strengths, areas for improvement, and the overall social return on investment.

Through this impact measurement analysis, iGA demonstrates its commitment to accountability, social responsibility, and evidence-based decision-making. By assessing the social impact of the Beekeeping Project, iGA can identify strategies to enhance the positive outcomes, optimize resource allocation, and ensure the long-term sustainability and effectiveness of the initiative.

Overall, this analysis provides a transparent and comprehensive evaluation of the social impact of iGA's Beekeeping Project, utilizing the SROI framework as a rigorous methodology. By measuring and communicating the social value created by the Project, iGA demonstrates its commitment to making informed decisions and fostering positive change within the community.

Purpose and Target Audience

The purpose of this analysis is to provide valuable insights into the changes experienced by two main audience groups: internal stakeholders at the management level and external stakeholders, including the local community, local authorities, and current and potential collaborators.

For internal stakeholders, the analysis aims to provide a comprehensive understanding of the changes brought about by the Project's activities. This includes assessing both positive and negative changes, as well as intended and unintended consequences. By gaining insights into these changes, decision-makers at the management level can make more informed decisions and optimize the value generated by the Project.

In terms of external stakeholders, the analysis serves as a means to effectively communicate the outcomes of the Project. By sharing the findings, iGA aims to foster collaboration with external stakeholders in order to mitigate any negative outcomes and enhance the positive ones. This collaborative approach ensures that the Project aligns with the needs and expectations of the local community, local authorities, and other collaborators.

Lastly, iGA is keen on understanding which specific activities within the Project have created the most value for stakeholders. By identifying these high-value activities, iGA can prioritize and focus on initiatives that have demonstrated a positive impact. This knowledge allows for a more strategic approach to resource allocation and ensures that efforts are directed towards activities that generate the greatest social value.

Scope & Boundaries

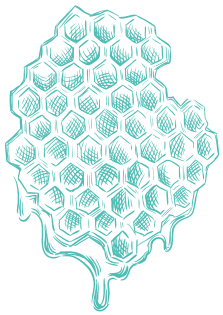
This is the second SROI (Social Return on Investment) Analysis conducted for iGA's social responsibility projects. The primary objective of this analysis is to determine which activities within the Beekeeping Project, specifically the technical and onsite training activities that facilitate an income-generating model, generate the most value for the local community. The focus is on the key stakeholders who directly benefit from the Project 's activities.

To effectively manage the impact and optimize the value created, the first step is to understand the changes experienced by these stakeholders. Additionally, assessing the value created for collaborating experts is an important aspect of this analysis as it indicates potential future collaborations and opportunities to enhance impact. Therefore, this social impact analysis is centred around the main beneficiaries and collaborating stakeholders, ensuring a focused scope for the analysis.

Type of SROI Analysis: Evaluative

There are two types of SROI: (1) Evaluative, which is conducted retrospectively and based on actual outcomes that have already taken place. (2) Forecast, which predicts how much social value will be created if the activities meet their intended outcomes. - A Guide to Social Return on Investment, The SROI Network, 2012

THEORY OF CHANGE (ToC)



STRATEGY

Community empowerment through training

Contribution to biodiversity conservation through beekeeping

INPUTS

- Financial capital
- Human capital
- Manufactured capital
- Social capital
- Intellectual capital

OUTPUTS

15 days/ 72 hours of technical training

1 day/ 10 hours field training

5 times (x8 hours) visit/control of beekeepers

supply of beekeeping equipment to beekeepers

OUTCOMES

Short Term
Training local people about additional income generating activities

Mid Term
Rehabilitation of beekeeping

Reduction of flight risk caused by bees around the airport

Long Term
Local sustainable development

Improvement of biodiversity

BEEKEEPING

Beekeeping is an ancient practice that involves the management and care of honeybee colonies for the production of honey, beeswax, and other valuable products. Beekeeping offers economic opportunities for individuals and communities, particularly in rural and marginalized areas.

Beekeeping promotes environmental conservation by supporting the health and well-being of bees and their habitats. Beekeeping is of global importance due to its crucial role in pollination, biodiversity conservation, and sustainable agriculture. Bees are vital pollinators for a wide range of crops, contributing to the production of fruits, vegetables, nuts, and seeds.

Turkey boasts a rich history and tradition of beekeeping, dating back centuries. With its diverse flora and favourable climatic conditions, the country has become a hub for beekeeping, supporting both commercial and small-scale operations. This thriving industry contributes to the national economy while supporting local beekeepers and their communities.

According to data from the Turkish Statistical Institute, Turkey produced 114,572 tons of honey in the year 2022. There were 95,386 registered beekeeper and 8,984,676 registered beehives in Turkey.

"Türkiye Beekeeping Map " created by Ministry of Agriculture and Forestry contains information about beekeeping prepared separately for the whole of Turkey and for the provinces.

iGA Beekeeping Project mainly focuses on the training of the community neighbouring İstanbul Airport; and this community located on rural areas of Arnavutköy, İstanbul. According to data from the Turkish Statistical Institute, there were 1357 registered beekeeper in İstanbul, and 979 tons of honey produced in 2022. Average yield per hive is 11.3 kg in İstanbul which is below the average of Turkey, 12.8 kg.

The efforts of iGA in Beekeeping Project could be beneficial to increase the interest in beekeeping and the efficiency of production process.

EXECUTIVE SUMMARY

iGA is trying to increase the resilience of the ecosystem by supporting the bee populations, which have an important place against climate resistance, as well as providing socio-economic benefits to the people of the region with the project of "rehabilitation and development of bee-keeping in the neighbourhoods adjacent to Istanbul Airport".

Within the scope of the Beekeeping Project, iGA provided 72 hours of theoretical training and 10 hours of practical training to trainees from the neighbourhoods adjacent to Istanbul Airport. After the training, iGA encouraged the trainees to start beekeeping by providing basic bee-keeping materials such as beehives, bee colonies, masks, and bellows. Also, after honey production by collecting samples to analyse, many parameters such as taste, odour, appearance, moisture, acidity, pH, proline, glucose-fructose, pesticide residue, heavy metals were checked, and the results were approved to comply with the Turkish Food Codex limits.

During the analysis, 23 stakeholders were interviewed via phone calls. According to the stakeholder voice, 8 well-defined outcomes were identified in total. 7 of them were positive, 1 of them were negative outcomes.

There were 1 unintended but expected outcome experienced by supplier, other positive outcomes were intended and expected. The negative outcome was unintended.

Stakeholder Group	Outcome
Local Trainees	• Learning by Experience • Increase in Honey Yield • Increase in Self Confidence • Emotional Wellbeing • Being Sad and Disappointed
Trainer	• Professional Improvement
Supplier	• Professional Satisfaction
Collaborated Firm	• Increase in Value in the Eyes of Society

The highest relative importance was '10' and the lowest one was '6'. Even if the negative outcome was experienced by only one stakeholder, it was included in the analysis to provide transparency.

The following table presents the allocation of value among different stakeholder groups:

VALUE DISTRIBUTION

%92 Local Trainees

%6 Collaborated Firm

%1 Trainer

%1 Supplier

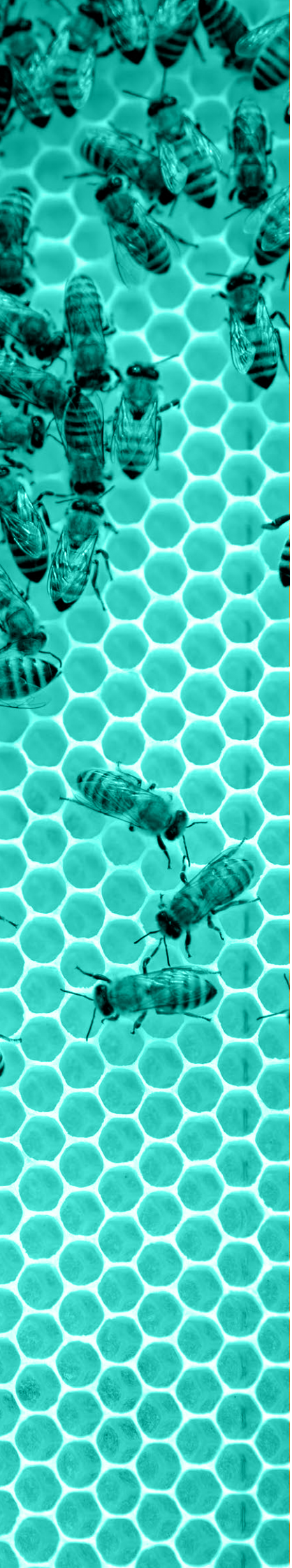
Stakeholder Group	Value (₺)
Local Trainees	8,52
Trainer	0,06
Collaborated Firm	0,58
Supplier	0,08

According to the chart above, the activities seem to have created higher value for the main stakeholder group of the Project: Local Trainees.

The SROI ratio defined for the Beekeeping Project iGA implemented since 2022 was analysed to be 1: 9.25 according to the evaluation of changes measured in all stake- holder groups. In other words, each 1 TL investment spent by iGA delivered 9.25 TL of social value.

What is SROI?
Social Return on Investment (SROI) is a framework for measuring and accounting for the value created or destroyed by our activities – where the concept of value is much broader than that which can be captured by market prices. SROI seeks to reduce inequality and environmental degradation and improve wellbeing by taking account of this broader value.

Social Value Principles
1- Involve stakeholders
2- Understand what changes
3- Value the things that matter
4- Only include what is material
5- Do not over-claim
6- Be transparent
7- Verify the result
8- Be responsive



PRINCIPLE 1: STAKEHOLDER INVOLVEMENT

Representation: A deliberate effort was made to ensure a fair and balanced level of representation from each stakeholder group. The figures below illustrate the number of interviews conducted in relation to the total number of stakeholders. The analysis includes 74% of the local trainees, indicating a high level of representation. Two local trainees (7.5%) were excluded from the analysis due to their inability to provide appropriate responses to the analysis questions based on their age. The remaining five participants (18.5%) were contacted on separate occasions to schedule interview meetings, but they did not respond.

Other main stakeholders; Trainer, Supplier, and Collaborated Firm were included in the analysis with 100% representation rate.

Access: Due to the limited access to internet connection and low internet literacy among the local trainees, phone call interviews were conducted as an alternative to Zoom calls. The trainers, suppliers, and the representative from the collaborating institution also preferred phone calls as they often had to change locations due to their job requirements, and phone calls provided accessibility while traveling. This approach ensured that interviews could be successfully conducted with all relevant stakeholders, taking into consideration their individual circumstances and preferences.

Stakeholder Identification

Stakeholder identification is done based on four questions;

- Who has invested in Beekeeping Project? (Time, service, money)
- Who has been directly affected by activities of Beekeeping Project?
- Who has been indirectly affected by activities of Beekeeping Project?
- Who has affected activities of Beekeeping Project?

Answers of these four questions are helpful to identify all related stakeholder groups. The table below shows the identified stakeholder groups.

Even though, this analysis is not focused on each stakeholder group, identifying them are important to be aware of who are affected by iGA Beekeeping Project's activities and who affects them in order to expand the scope of the analysis in the future.

Regarding the excluded stakeholder groups, three of them (Family members/ friends of local trainees, Co-workers & trainees of trainers) should be included in the next phase of the analysis because there is potential mutual value creation which would be worth to identify.

Stakeholder Group	Reason for Inclusion	Reason for Exclusion	Communication Method	Included Number	Total Number
Local Trainees	Main beneficiaries		Phone interview	20	27
Trainer	Crucial partner to optimise value for main beneficiaries		Phone interview	1	1
Supplier	Crucial partner to optimise value for main beneficiaries		Phone interview	1	1
Collaborated Firm	Crucial partner to optimise value for main beneficiaries		Phone interview	1	1
Family members / friends of local trainees		Not a focused group for the first analysis. This group is planned to be included in the second phase of analysis	N/A	N/A	N/A
Co-workers & trainees of trainers		Not a focused group for the first analysis. This group is planned to be in the second phase of analysis	N/A	N/A	N/A

Stakeholders Involvement in Identifying Other Stakeholders

Each stakeholder group was also included in the stakeholder identification process by asking them two questions;

(1) who might be affected by the changes that stakeholders have experienced and
(2) who else might be affected by the Project's activities?

These two questions were asked during one-on-one interviews. The answers to "Who has been indirectly affected by activities of the Project?" was the same as the question to identify stakeholders.

The stakeholders' families and friends/relatives were identified as additional stakeholder groups of the Project. According to the trainees, their family members and friends who learned about the Project also expressed interest in participating in the activities. This indicates a word-of-mouth effect and an increased demand for the Project's activities. Although this extended stakeholder group was not included in this analysis, it is suggested to be considered in future analyses to optimize the value of the Project.

The focus of this analysis was to identify the activities that were most valuable to the local trainees. Understanding the most valuable activities is crucial as it allows iGA to potentially invest more in those activities. This analysis can guide better decision-making regarding social investments, ensuring that resources are allocated effectively to maximize social impact.

The exclusion decision has been made based on the assumption of the Social Value Associate.

Topics Including Stakeholder Voice

The questions that were asked to stakeholders were prepared with the aim of maximising stakeholder participation in the analysis. The topics, ensuring stakeholder participation in accordance with the questions asked and the answers received, were as follows:

- The anticipated changes when joining the Project
- The type of investment made (time, service, money)
- Involved activities
- Positive and negative outcomes/changes
- Whether there are any persons/institutions that contributed to the outcome(s)
- Whether the outcomes would have happened anyway
- The importance level of the outcomes from the perspective of the stakeholder (weighting)
- Whether outcomes are sustainable or not (duration)
- The amount of changes that they have experienced (depth)
- Value of outcomes (by Value Game)

Segmentation

The first part of the questionnaire focused on gathering demographic information about the stakeholders. These questions were identified during the one-on-one interviews and were designed to help segment the stakeholder group. By understanding the demographics of each stakeholder, we can better comprehend the reasons behind their varying experiences, even when engaging in the same activity.

It is important to consider the different segments of stakeholders in order to understand the reasons behind the variations in the importance, depth, and outcomes experienced by different individuals. Each stakeholder group were asked different baseline questions (please see Annex A) because they all engage in different activities and experience different changes that depends on various reasons. There are common questions related with stakeholders';

- Age
- Gender
- Location of residence
- Employment status
- Education level
- Marial status

PRINCIPLE 2:
UNDERSTAND WHAT CHANGES

This section of the analysis focuses on the activities implemented within the project and examines the resulting changes. It takes into account both the positive and negative changes, as well as unintended and intended outcomes. By considering these changes, we aim to identify the material impact on stakeholders, providing a more accurate understanding of the effects of the project.

This analysis is intended to inform iGA's decision-making process, enabling the optimization of social value. By identifying the significant changes experienced by stakeholders, iGA can make informed decisions on which activities should be prioritized and further enhanced to maximize positive outcomes and minimize negative impacts.

The comprehensive assessment of changes resulting from activities ensures a holistic view of the project's impact and guides iGA in making strategic decisions that align with its social responsibility goals.

Inputs and Outputs

The table below shows the inputs and outputs of stakeholder groups that were included in the analysis.

Stakeholder Group	Inputs	Monetary Value of Inputs	Outputs
Local Trainees	Time & Money	*Only 1 trainee had an opportunity cost of his time -TL 420 *Spending money for transportation to trainings TL 1080	**Attending 15 days / 72 hours theoretical trainings **Attending 1 day / 10 hours field training **Having 5 beehives and beekeeping equipment
Trainer	Time & Service		**Providing training in his field of specialization **5 times (x8 hours) visit/control of beekeepers
Supplier	Time & Service & Money *(as discount)*	*TL 80,000	*Supplying the Bees *Providing area and equipment for field training
Collaborated Firm	Time & Service	* TL 1000	*Providing consultancy for project implementation *Incorporating the trainer into the project *Analysing the quality of honey
iGA	Service & Money (TL)	*TL 359,000	*Designing, organising, and managing activities of the Beekeeping Project

Local Trainees

According to their own statements one of the stakeholders had an opportunity cost (TL 420), the other trainer stated that he can define the spendings for transportation to trainings as an investment, so the estimated price was included (TL 1080). Even if the local trainees were the main beneficiary of the activity, opportunity cost was included in the analysis.

Supplier

The supplier invested his time and service. He provided his beekeeping area and equipment for field training; he shared his experience with trainees. Additionally, the supplier stated that they did not take into account the price increases that may arise after the contract period while pricing the beehives supplied to IGA within the scope of the project, and they considered it as an investment. According to his own statement, the total investment can be calculated as TL 80,000.

Trainer

The trainer received monetary compensation for his shared intellectual capital and time. Therefore, he did not have any additional contribution that could be considered as an investment. The payment amount was included in İGA's input value.

Collaborated Firm

The collaborated firm has defined their consultancy during the implementation phase of the project as 3 hours and stated that it is considered a TL 1000 investment.

iGA

As the owner of the Beekeeping Project, iGA invested its financial capital and human capital. Total amount of investment of iGA was TL 359,000.

Outcomes

Data collection for the analysis of the outcomes of the "iGA Beekeeping Project" was carried out between December 2022 and May 2023. The purpose of this data collection was to understand the impact of the project on the stakeholders involved. Interviews were conducted with the stakeholders through online platforms and phone calls, allowing for convenient and efficient data collection.

In order to identify well-defined outcomes, all stakeholders were asked about the initial changes they experienced in their lives as a result of their participation in the project. This included both positive and negative outcomes. The outcomes reported by each stakeholder group have been compiled and presented in the charts below, providing a comprehensive overview of the impact of the project on various aspects of stakeholders' lives.

Independency of Well-Defined Outcomes & Double Counting Risk

The analysis examined the dependency or independence of well-defined outcomes by considering if one outcome would occur regardless of the occurrence of other outcomes. This was done through separate assessments of the change chain for each stakeholder group.

To avoid double counting and ensure accurate attribution of outcomes, stakeholders were engaged in discussions to determine if a specific outcome would still occur independently of other related outcomes. This process helped validate the independence of outcomes and ensure a clear cause-and-effect relationship between changes and outcomes.

By assessing outcome independence, the analysis enhances the reliability of results and provides stakeholders with confidence in the findings. It allows for a more precise understanding of how individual changes contribute to specific outcomes, facilitating informed decision-making and program optimization.

Overall, this consideration of outcome independence ensures the integrity and accuracy of the analysis, providing a comprehensive understanding of the project's impact on stakeholders.

Stakeholder Group 1: Local Trainees

In order to understand the impact of age, gender, education level, location of residence, employment status, marital status data was gathered and segmented.

GENDER

%90 Male %10 Female

AGE

%35 40s %25 50s
%20 30+ %15 60+
%5 20s

EDUCATION LEVEL

%50 Primary School
%15 High School
%15 University *2 years*
%10 University *4 years*
%5 Masters Degree
%5 Secondary School

LOCATION OF RESIDENCE

%80 in the neighbourhoods around Istanbul Airport
%15 in İstanbul but not in the neighbourhoods around Istanbul Airport
%5 Outside of İstanbul

EMPLOYMENT STATUS

%30 Worker *White Collar*
%30 Retired
%30 Self Employed
%10 Worker *Blue Collar*

MARITAL STATUS

%95 Married %5 Single

The gender distribution shows a significant gender imbalance, with only 2 females and 18 males. To promote gender diversity and inclusivity, it is important to implement targeted strategies to encourage more women to participate.

The participants' age ranges from the 24 to 76 This diverse age range indicates that beekeeping can attract individuals from different generations. It is essential to tailor the training content and delivery methods to cater to the specific needs and interests of participants across different age groups.

The education level of participants varies, ranging from primary school to a master's degree. This diversity highlights that beekeeping training can be accessible to individuals with different educational backgrounds.

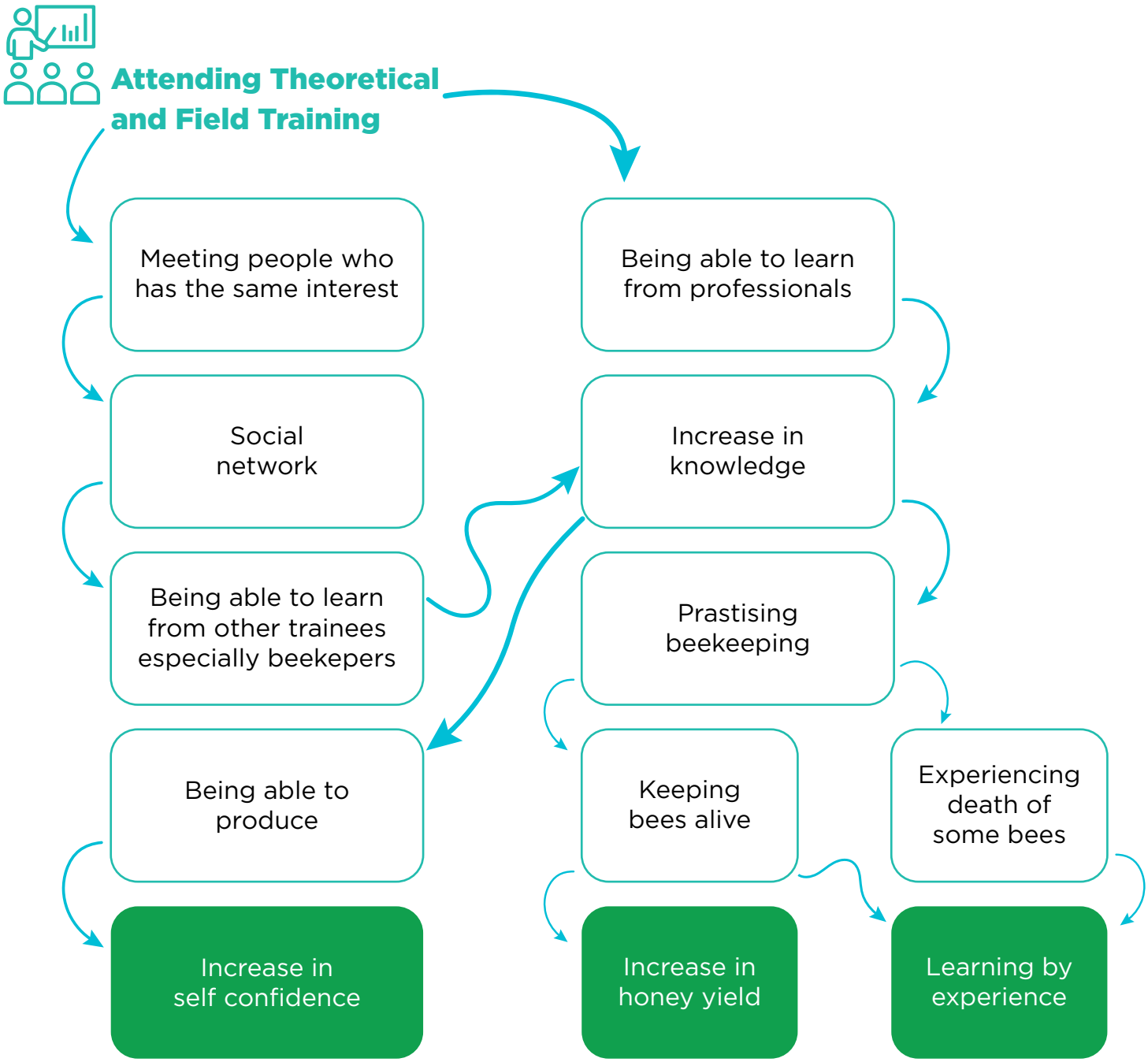
The data suggests that most participants (16) reside in the neighbourhoods around Istanbul Airport, indicating a local interest in beekeeping. However, it is important to note that individuals who were not residing in the neighbourhoods around Istanbul Airport also heard about to Project and want to participate in. This helps broader representation and reputation of iGA Beekeeping Project.

The participants' employment status varies, including white-collar workers, blue-collar workers, self-employed individuals, and retirees. This demonstrates that beekeeping can attract individuals from different professional backgrounds and stages of life. It presents an opportunity to leverage participants' existing skills and experiences while providing additional income generation possibilities.

The majority of participants (19) are married, with only one participant being single. It is interesting to note that married individuals show an interest in beekeeping.

These graphs represent the Local Trainees included the analysis.

Chain of Change



Having Bees and Beekeeping Equipment

Increase in the responsibility to take care of bees

Having emotional ties with bees

Experiencing death of some bees

Being sad and disappointed

Spending quality time with family members

Having a hobby

Emotional wellbeing

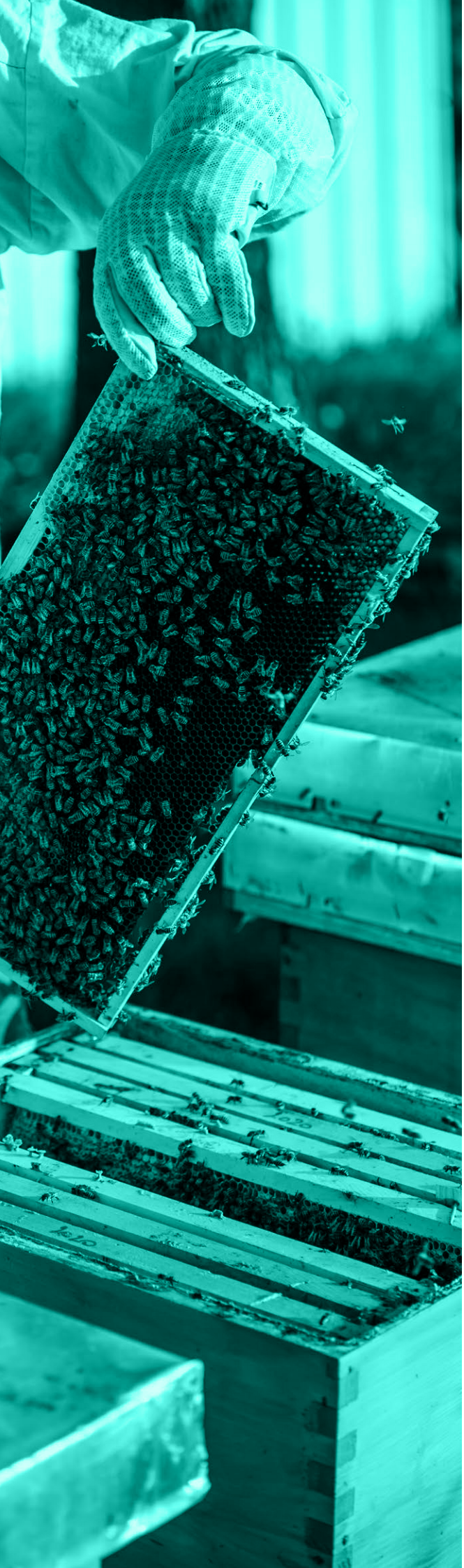
Outcome 1: Learning by Experience

The outcome was experienced by 8 stakeholders out of 20. Learning by experience outcome was experienced regardless of keeping bees alive or experiencing death of some bees. This emphasizes the importance of the learning process itself. It suggests that participants gained valuable knowledge, skills, and insights through their hands-on experience and engagement with the training. This highlights the resilience and adaptability of beekeepers to learn and grow from both successful and challenging beekeeping experiences. It also underscores the notion that even in the face of setbacks or losses, beekeepers can draw valuable lessons and enhance their practices through experiential learning. This understanding can empower beekeepers to persist in their journey, learn from their experiences, and strive for continuous improvement, irrespective of the specific outcomes in any given season.

Indicators

Subjective	Objective
*Improved judgment in making decisions related to beekeeping	*Implementation of stronger bee swarm prevention measures
*Feeling more capable in anticipating and preventing potential issues	*Increased collaboration with experienced beekeepers
*Heightened awareness of environmental factors affecting bee colonies	

- "The learning journey in beekeeping is continuous, and each day brings new insights and opportunities for growth."
- "Losing all my beehives is disheartening, but it's an opportunity to learn and become a better beekeeper."
- "I underestimated the challenges and complexities of beekeeping.
- I need to educate myself further."
- "I need to analyse the environmental factors that might have contributed to the losses and make necessary adjustments."



Completeness: 12 local trainees out of 20 did not experience this outcome. The variability in "learning from experience" outcomes among participants of the same training, regardless of their experience levels ranging from new beginners to master beekeepers, can be attributed to a combination of factors. While the training provides a common foundation of knowledge and skills, individual differences, implementation practices, and prior experience play crucial roles.

Depth of Change: The weighted average depth of change was 40% for this outcome. There were 1 outlier regarding depth of the outcome. The stakeholder evaluated himself at point 0 before joining the beekeeping training and point 10 after the training. His main point was participating in a well-designed program with content, trainer, and participants; and being able to practice beekeeping.

Outcome 2: Increase in Honey Yield

The outcome was experienced by 5 stakeholders out of 20. This finding signifies that the training had a positive impact on the participants' ability to enhance their honey production. The increase in honey yield suggests that the training provided valuable knowledge and techniques related to hive management, bee nutrition, or honey extraction methods. It indicates that the participants were able to apply the acquired knowledge effectively, resulting in improved productivity.

However, it is important to consider that in the context of the current high inflation in Turkey, this increase in yield may not necessarily result in a proportional increase in economic gain. The rising costs of inputs, such as beekeeping equipment, hive maintenance supplies, due to inflation can offset the benefits of higher honey production. While the participants experienced an improvement in honey yield, it is crucial to recognize the broader economic challenges they face.

Indicators

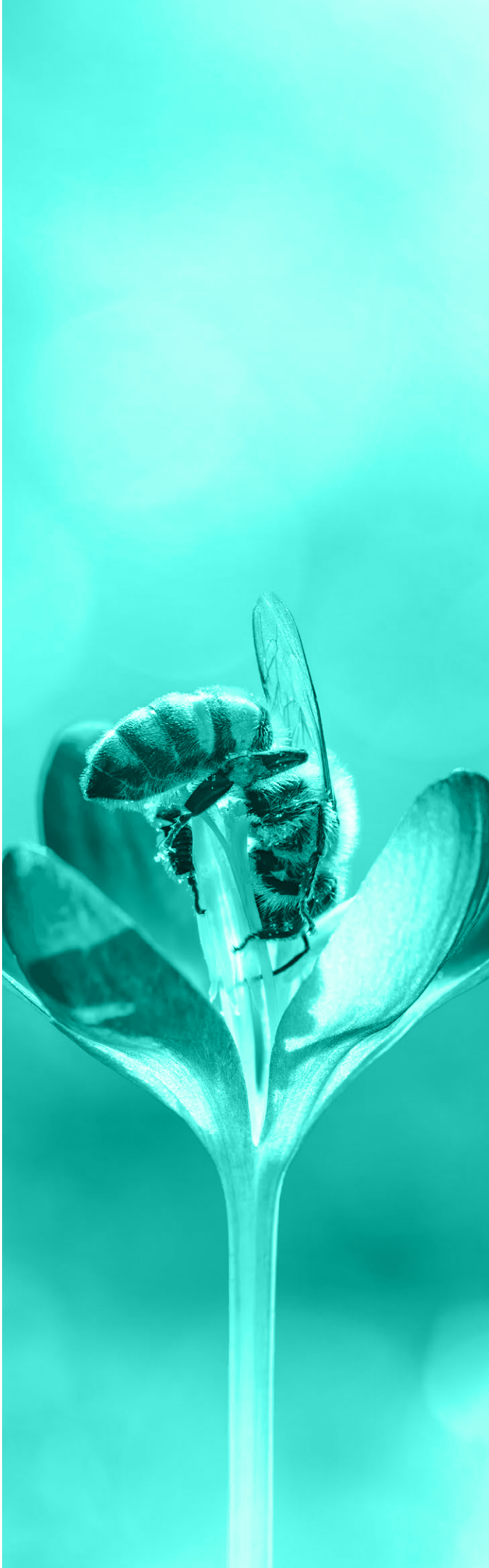
Subjective	Objective
* Satisfaction	* Quantitative measurement of honey yield in kilograms
*Positive perception of personal growth in beekeeping skills	* Positive feedback from consumers of honey
*Heightened motivation and enthusiasm for beekeeping	

- "The increase in honey yield is a great reward for the effort and care we put into our bee colonies."
- "While the increase in honey yield may be lower than expected, it reflects the challenges we faced."
- "Every bit of increase in honey yield is a step in the right direction for our beekeeping operation."

Completeness: 15 local trainees out of 20 did not experience this outcome. There are several reasons declared by local trainees why some of them might not experience an "increase in honey yield" despite their efforts. One possible factor is the availability of nectar sources and forage in the area where the beekeepers operate. Limited or poor-quality forage can result in reduced honey production as bees struggle to gather sufficient nectar.

Furthermore, the weakness of bee colonies in terms of may have resulted challenges in honey production. Poor colony strength, disease outbreaks, or infestations by pests like Varroa mites can hinder the bees' ability to collect nectar and produce honey efficiently.

Depth of Change: The weighted average depth of change was 35% for this outcome. This depth of change is quite low among the depth of changes of outcomes experienced by local trainees. There were no outliers. Those who experienced this change stated that they could not fully implement what they learned in training due to factors such as environmental and hive health.



Outcome 3: Increase in Self Confidence

The outcome was experienced by 4 stakeholders out of 20. This indicates that participating in beekeeping activities has positively impacted their sense of self-assurance and belief in their capabilities. The reasons for this increase in self-confidence can be attributed to

- engaging in honey production,
- acquiring a new skill, and
- being able to earn money.

Firstly, engaging in honey production allows beekeepers to witness the tangible results of their efforts, which can boost their confidence in their abilities as beekeepers. The process of managing bee colonies, extracting honey, and successfully producing a marketable product provides a sense of accomplishment and validation.

Secondly, developing a new skill in beekeeping empowers individuals and expands their knowledge base. Gaining proficiency in hive management, understanding bee behaviour, and implementing best practices instils a sense of competence and self-assurance. As beekeepers acquire expertise in this specialized field, their confidence naturally grows.

Lastly, being able to earn money through beekeeping can significantly contribute to an individual's self-confidence. Generating income from selling honey products validates the beekeeper's skills and efforts, reinforcing their belief in their ability to make a meaningful contribution and achieve financial independence.

These experiences of increased self-confidence demonstrate the broader impact of beekeeping beyond honey production alone. It highlights the personal growth, empowerment, and fulfilment that beekeeping can bring to individuals. By recognizing and celebrating these valuable outcomes, beekeepers can further nurture their self-confidence and continue to thrive in their beekeeping endeavours.

Indicators

Subjective	Objective
* Increased belief in personal abilities as a beekeeper	*Ability to share knowledge and expertise with other beekeepers, demonstrating confidence in one's understanding of beekeeping practices
*Feeling of having potential for income generation	*Willingness to experiment with new beekeeping techniques or approaches
*Feeling more confident in handling and managing bee colonies	*Expansion of beekeeping operations and the declared intend to scale up the number of bee colonies
*Positive mindset and attitude towards challenges faced in beekeeping	

- "Engaging in honey production has boosted my self-confidence as I witness the results of my hard work."
- "Engaging in honey production, acquiring a new skill, and earning money collectively increase my self-confidence to pursue passions and embrace challenges."

Completeness: 16 local trainees out of 20 did not experience this outcome. When we have a look at the background of the beneficiaries, we see that all are new beginners. Previous experiences and personal background play a significant role. Individuals who have encountered setbacks or failures in the past may find it more challenging to develop self-confidence, even when participating in the production process.

Depth of Change: The weighted average depth of change was 60% for this outcome. This depth of change is quite high among the depth of changes of outcomes experienced by local trainees. There were no outliers. Those who experienced this change stated that they need more time and experience to overcome personal barriers and experience the increase in the depth of change.

Outcome 4: Emotional Wellbeing

The outcome was experienced by 5 stakeholders out of 20. This indicates that engaging in beekeeping activities has positively impacted their emotional state and overall mental health. The reasons for this improvement in emotional wellbeing can be attributed to

- having a new hobby and
- finding a new way to spend time with family members.

Firstly, having a new hobby like beekeeping offers a sense of purpose and fulfilment. It provides individuals with a meaningful and engaging activity that they can look forward to and invest their time and energy in. Beekeeping can allow beekeepers to disconnect from daily stresses and find solace in the care and nurturing of their bee colonies.

Secondly, finding a new way to spend time with family members fosters emotional connections and strengthens relationships. Beekeeping can be a shared experience that involves family members working together towards a common goal. Collaborating on beekeeping tasks, sharing the joy of honey harvests, and learning together can create moments of bonding and deepen familial ties. This shared experience can bring about a sense of joy, companionship, and emotional support for the beekeepers and their family members.

By recognizing the impact of beekeeping on emotional wellbeing, stakeholders can further nurture and prioritize their mental health alongside honey production. Engaging in a fulfilling hobby and fostering meaningful connections with loved ones can contribute to a more balanced and positive emotional state, ultimately leading to a greater overall sense of wellbeing.

Indicators

Subjective	Objective
*Reduced feelings of stress or anxiety	* Regular engagement in beekeeping activities with enthusiasm
* Increased sense of happiness	* Positive interactions and communication with fellow beekeepers and family members
* Improved overall mood and emotional state	*Increased number of times spend with family members
*Heightened sense of connectedness with nature	*Expressing enthusiasm and passion for beekeeping when discussing the topic with others

- "Beekeeping has become a source of emotional wellbeing for me, offering a therapeutic escape from the stresses of everyday life."

- "Having a new hobby like beekeeping and sharing it with my family member has added a new dimension of happiness to our lives."

Completeness: 16 local trainees out of 20 did not experience this outcome. Individual mindset and self-perception play a crucial role while describing "emotional wellbeing" as an outcome. Even the other local trainee might have experienced this outcome; they did not mention that in interviews.

Depth of Change: The weighted average depth of change was 35% for this outcome. Because their starting points were not low, which were 6 or 6.5; the depth of change remains quite low.

Outcome 5: Being Sad and Disappointed

Only one stakeholder out of 20 experienced this negative outcome. This outcome highlights the emotional connection that can develop between beekeepers and their bees. For this stakeholder, the emotional ties they formed with the bees played a significant role in their feelings of sadness and disappointment. Feeling a deep sense of responsibility to keep the bees alive, they invested their time, energy, and care into nurturing and protecting their colony. However, experiencing the death of most of the bees likely caused a profound sense of loss and grief. The bond between beekeeper and bees can be powerful, with each individual bee holding a special place in the beekeeper's heart.

Indicators

Subjective	Objective
* Increased emotional sensitivity and vulnerability	*Expressing a continued willingness and determination to continue beekeeping despite the setbacks and challenges faced
*Feeling a sense of personal responsibility for the well-being of the bees	*Active efforts to implement new strategies to prevent future losses
*Increased motivation to take care remaining bees	*Crying after loss

- "The loss of most of my bees has left me feeling saddened and disheartened, as I had invested a great deal of time and effort into their care."
- "Despite the emotional setback, I am determined to learn from this experience and find ways to improve my beekeeping practices."

Completeness: Other 19 local trainees did not experience the outcome. The reason for this is that these 19 local trainees perceive losses as an inherent aspect of beekeeping and do not attribute the loss of bees to their personal capabilities. They have developed a mindset that acknowledges the inherent challenges and uncertainties involved in beekeeping, including the potential for losses. Rather than viewing these losses as a reflection of their own inadequacies, they approach them as natural occurrences within the realm of beekeeping. This perspective allows them to maintain a more objective and constructive mindset, focusing on learning from setbacks and implementing strategies to mitigate future losses. By reframing losses as part of the broader beekeeping experience, these trainees demonstrate resilience and a commitment to continuous improvement in their beekeeping practices.

Depth of Change: The negative outcome occurred as a result of participating in a training program. There was no expectation before joining the training. So that the depth of the change is taken as 100%.

Stakeholder Group 2: Trainer

The trainer in the beekeeping training program is a dedicated and experienced individual who plays a vital role in guiding and supporting the trainees. With a wealth of knowledge and expertise in beekeeping, the trainer brings valuable insights and practical experience to the project. He participated in theoretical and field training sessions.

The trainer has frequently attended such trainings and worked with similar trainees.

Chain of Change

Providing Field and Theoritical Training

Participating in a well designed project

Teaching to an interested and curious audience

Keep researching and learning on his area

Professional Improvement

Outcome 1: Professional Improvement

The trainer's professional improvement is closely tied to their active participation in the learning process and their consistent communication with trainees through calls and messages. By actively engaging in the learning process, the trainer stays connected with the challenges and experiences faced by trainees, allowing them to continually refine their knowledge and teaching approaches. Additionally, the ongoing communication with trainees outside of training sessions enables the trainer to provide timely support, address queries, and share valuable information. This continuous interaction fosters a collaborative learning environment, benefiting both the trainees as they exchange insights, learn from each other, and collectively contribute to their professional growth in the field of beekeeping.

Indicators

Subjective	Objective
* Increased willingness to do additional research while delivering training sessions	* Positive feedback from trainees on training sessions and materials
	* Higher trainee satisfaction comments

- "The positive feedback and satisfaction expressed by trainees have been indicators of my professional improvement as a trainer."

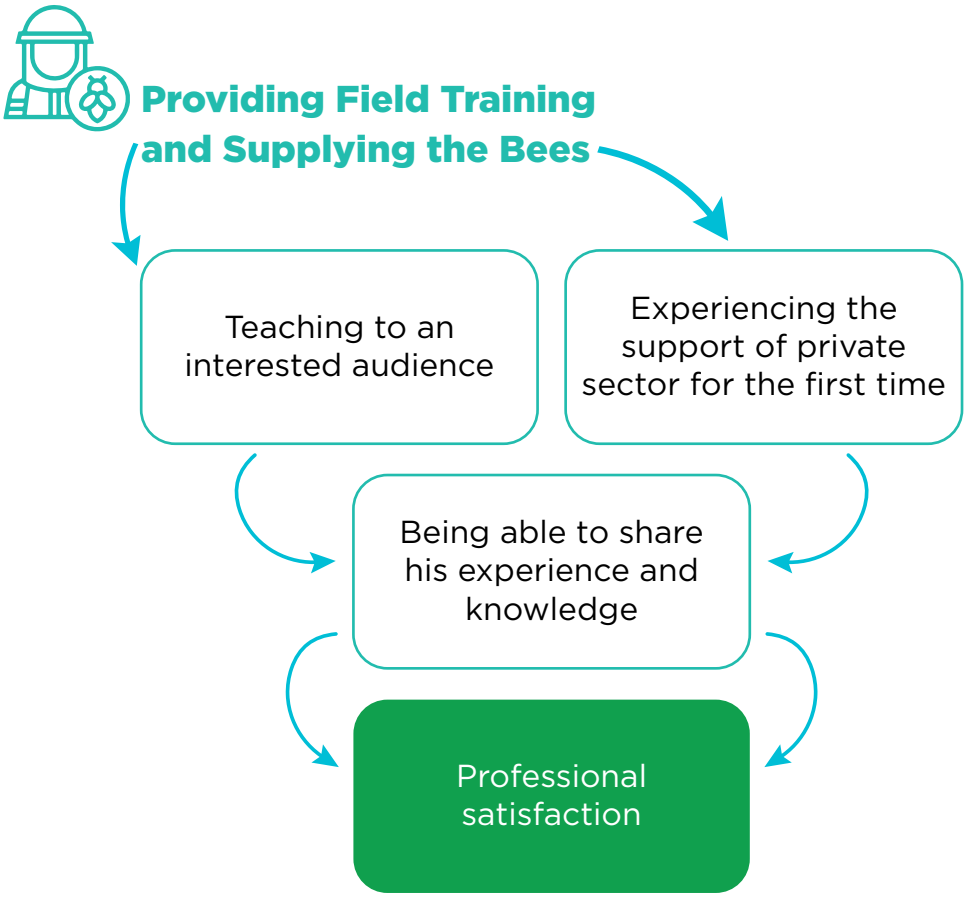
Completeness: N/A

Depth of Change: The depth of change was 10% for this outcome. Since the trainer was among the best ones in his field, the amount of change was low, which might also be expected.

Stakeholder Group 3: Supplier

In addition to supplying the beehives, the supplier plays a crucial role in facilitating the practical aspects of beekeeping training, ensuring that participants have access to live bee colonies, suitable training grounds, and the necessary equipment for hands-on learning.

The supplier has been working closely with the trainer and help him by providing area and equipment for field trainings.



Outcome 1: Professional Satisfaction

The supplier experienced the outcome of "professional satisfaction" due to his involvement in the learning process and the feeling of enabling others to learn. By actively participating in the training project, the supplier witnessed firsthand the progress of trainees as they acquired new skills and knowledge in beekeeping.

Being a part of the learning process allowed the supplier to see the positive impact of his contribution, which in turn brought about a sense of professional satisfaction. By supplying bees and providing the required resources, he has a role in empowering others to learn and excel in the field of beekeeping.

Indicators

Subjective	Objective
*Enjoyment and satisfaction in collaborating with trainer and trainees	*Continuous relationships with trainees
	*Long-term partnerships with trainer
	*Positive feedback and expressions of gratitude from trainees

- "Being able to contribute to the development of the beekeeping community through my role as a supplier brings me a profound sense of purpose and professional satisfaction."

Completeness: N/A

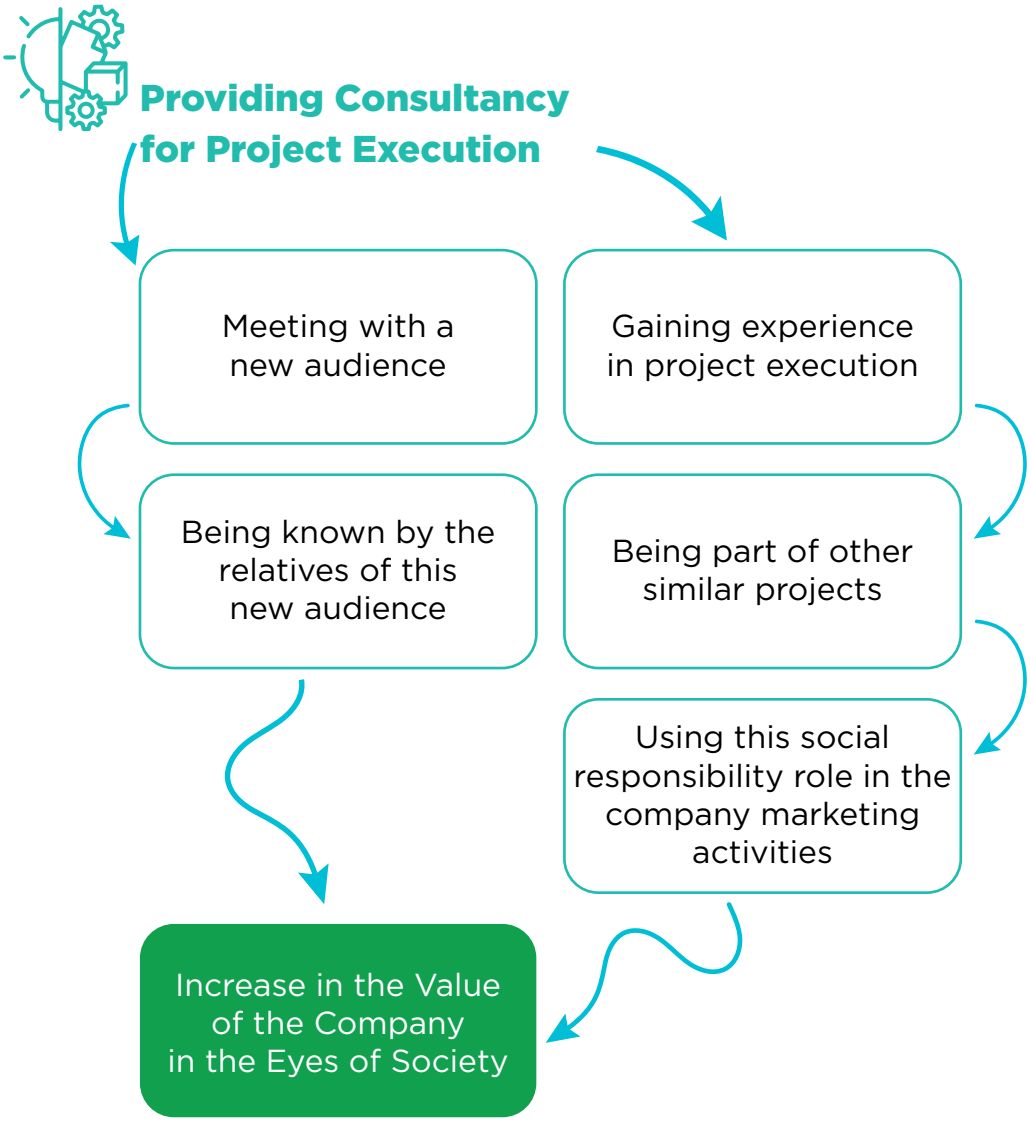
Depth of Change: The depth of change was 20% for this outcome. The professional design of the program and the eagerness of the trainees significantly contribute to the amount of change experienced, despite his participation in the same activities.

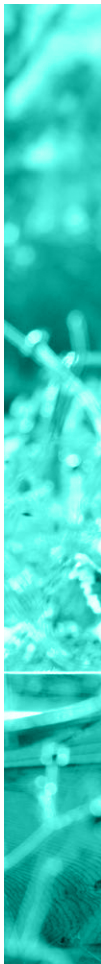
Stakeholder Group 4: Collaborated Firm

A collaborated firm is a private company specialized in honey and other by-products of beekeeping. In the context of beekeeping training projects, this firm contributes by providing valuable services such as consultancy for project implementation, incorporating the trainer into the project, and analysing the quality of honey.

The firm is a socially responsible firm and give importance to the training of beekeepers.

Chain of Change





Outcome 1: Increase in Value in the Eyes of Society

As a result of its involvement, the collaborated firm experiences the outcome of "Increase in Value in the Eyes of Society." This indicates that the firm gains a higher level of recognition, respect, and esteem from society due to its contributions and expertise in the field of beekeeping.

Indicators

Subjective	Objective
*Feeling of attributing their workforce to meaningful activities	*Engaging in new similar projects
*Having more socially responsible employees	

- "The increase in value in the eyes of society reflects the trust and confidence placed in our expertise and services in the honey and beekeeping industry."

Completeness: N/A

Depth of Change: The depth of change was 10% for this outcome. Because the firm supports and participates in the similar projects; the amount of change is quite lower.

PRINCIPLE 3:
VALUE THE THINGS THAT MATTER

Recognizing and assigning value to meaningful outcomes necessitates a deliberate acknowledgment of the varying significance and worth of different changes that individuals experience or are expected to experience as a direct consequence of their engagement in activities. The notion of value is inherently subjective, underscoring the importance of applying Principle #3 in conjunction with Principle #1, which emphasizes stakeholder involvement. By incorporating stakeholders' perspectives, we ensure that outcomes are valued based on their unique vantage points. Furthermore, Principle #3 extends to valuing the inputs necessary for implementing the activities that are being accounted for. This holistic approach allows for a comprehensive assessment of value, encompassing both the outcomes and the inputs essential for their realization.

Relative Importance

Relative importance shows the non-monetary value of outcomes. In order to maximise social value, understanding the relative importance of outcomes is crucial. "Value is inherently subjective, and therefore we must estimate this value as best we can through involving those who experience the value in the process of quantifying the relative importance."

Stakeholders were asked to weigh the outcomes by using a scale of 1 to 10. The answers of the stakeholders were calculated by taking the weighted average.

The table below shows the relative importance of outcomes for each stakeholder group. All outcomes' relative importance was between 6-10.

The negative outcome's relative importance was quite high. For local trainees, negative outcome was as important as positive outcome. It should be noted that this negative outcome experienced by only 1 stakeholder in local trainees group.

Stakeholder Group	Outcome	Relative Importance
Local Trainees	Learning by Experience	6
	Increase in Honey Yield	6
	Increase in Self Confidence	8
	Emotional Wellbeing	10
	Being Sad and Disappointed	10
Trainer	Professional Improvement	7
Supplier	Professional Satisfaction	8
Collaborated Firm	Increase in Value in the Eyes of Society	9

Value of Outcomes - Monetization

Monetizing the value of outcomes helps us to compare different changes and make better decisions. Stated preference approach was used to translate the relative importance into money language:

Stated Preference: As Peter Scholten says "value is in the eye of the stakeholders" . For this analysis stakeholders are involved while translating the relative value into money language. All stakeholder groups outcomes' proxy of outcomes is determined by stakeholders with this approach.

During one-on-one interviews Value Game was applied and each stakeholder group make a list of things that are important and meaningful to have them. Then they placed the well-defined outcomes in the sequence of products. The weighted average of monetary value was used as a financial proxy of the outcomes.

The list of financial proxies of outcomes were given in Appendix C for each stakeholder group.

Anchoring was used with the monetization approaches in the analysis of local trainees stakeholder group. As the relative importance of outcomes were identified, in order to determine anchoring point, each outcome's weighted average value was determined. The highest relative importance (non-monetary value) of outcomes was used as anchoring point.

Trainer, Supplier, and Collaborated Firm had an outcome each and these outcomes specific "relative value".

All financial proxies were calculated according to the relevant year (2022), taking into account the inflation rate.

PRINCIPLE 4:
ONLY INCLUDE WHAT IS MATERIAL

Two screening was done to well-defined outcomes in order to understand whether the outcomes were material or not; (1) Relevance test and (2) Significance test. The results of tests were compared with the threshold of iGA and decided as material or not.

All of the defined outcomes could pass the relevance and significance tests. In sensitivity analysis, the results have been ranked by comparing and prioritizing 8 changes experienced by all stakeholders within the scope of the project. The table below shows the significance test conclusion range:

Conclusion	Quantity	Value	Deadweight	Attribution	Relative Importance
HIGH	the result ≥ 8	the result ≥ 450.000	the result ≥ 40%	the result ≥ 40%	the result ≥ 8
MEAN	7 ≥ the result ≥ 4	450.000 ≥ <|the result| ≥ 250.000	40% ≥ the result ≥ 25%	40% ≥ the result ≥ 25%	7 ≥ the result ≥ 4
LOW	4 ≥ the result	250.000 ≥ the result	25% ≥ the result	25% ≥ the result	4 ≥ the result

Local Trainees

Outcome 1: Learning by Experience

Relevance Criteria	Yes	No	Description
Policy based performance	✓		It was an intended outcome and related to iGA's policy of training local people by theoretical and field training as well as encouraging them to practise beekeeping.
Stakeholder behaviour and concerns	✓		By having beehives and equipment and actively engaging in hands-on activities stakeholders stated that they experienced this change as a result of participating in the iGA Beekeeping Project.
Societal norms	✓		Turkish societal norms play a role in shaping the perception and importance given to learning by experience. Additionally, cultural factors and expectations within the society may impact the degree of emphasis placed on experiential learning.
Direct short term financial Impacts		✓	The value of experiential learning lies in its long-term potential for career growth and financial gains rather than immediate financial impacts.
Peer based norms	✓		Even there was no other Beekeeping Project implemented by a private firm and that was conducted focusing on the same location and aiming to invest in local development of the villages near to İstanbul Airport; this outcome can be compared the other similar activities includes hands on learning process.
Conclusion	✓		

Significance Criteria	Quantity	Value	Deadweight	Attribution	Relative Importance
	8	326,670.60₺	40%	40%	6
Conclusion	HIGH	MEAN	HIGH	HIGH	MEAN

Outcome 2: Increase in Honey Yield

Relevance Criteria	Yes	No	Description
Policy based performance	✓		It was an intended outcome and related to iGA's policy of supporting beekeeping activities.
Stakeholder behaviour and concerns	✓		Stakeholders stated that they had a chance to practice their knowledge gathered from the iGA Beekeeping Project training sessions.
Societal norms	✓		Beekeeping is a valued agricultural practice in Turkey, and honey holds cultural and traditional significance. The desire to meet local and international market demands, preserve beekeeping traditions, and support local honey production may drive stakeholders to strive for increased honey yield.
Direct short term financial Impacts		✓	The increase in honey yield can have direct short-term financial impacts on stakeholders. Higher honey yield can result in increased sales and revenue for beekeepers, especially if they can meet market demand and command competitive prices. But in the context of the current high inflation in Turkey, this increase in yield may not necessarily result in a short term increase in economic gain. The rising costs of inputs, such as beekeeping equipment, hive maintenance supplies, due to inflation can offset the benefits of higher honey production.
Peer based norms		✓	It was not possible to conduct a peer assessment since there was no other Beekeeping Project implemented by a private firm and that was conducted focusing on the same location and aiming to invest in local development of the villages near to İstanbul Airport.
Conclusion	✓		

Significance Criteria	Quantity	Value	Deadweight	Attribution	Relative Importance
	5	326,670.60₺	25%	40%	6
Conclusion	MEAN	MEAN	MEAN	HIGH	MEAN

Outcome 3: Increase in Self Confidence

Relevance Criteria	Yes	No	Description
Policy based performance	✓		It was an intended outcome and related to iGA's policy of supporting beekeeping activities and training local people to expertise.
Stakeholder behaviour and concerns	✓		Stakeholders stated that they experienced this change as a result of participating in the iGA Beekeeping Project.
Societal norms		✓	This outcome had no relation to any societal norms.
Direct short term financial Impacts		✓	With the increased self-confidence, stakeholders may continue beekeeping as an income generating activity in the long term.
Peer based norms	✓		Even there was no other Beekeeping Project implemented by a private firm and that was conducted focusing on the same location and aiming to invest in local development of the villages near to İstanbul Airport; this outcome can be compared the other similar activities includes hands on learning process.
Conclusion	✓		

Significance Criteria	Quantity	Value	Deadweight	Attribution	Relative Importance
	4	435,560.80₺	25%	10%	8
Conclusion	MEAN	MEAN	MEAN	LOW	HIGH

Outcome 4: Emotional Wellbeing

Relevance Criteria	Yes	No	Description
Policy based performance		✓	It was an expected outcome but not intended one. Emotional wellbeing is not relevant to iGA's policy.
Stakeholder behaviour and concerns	✓		Stakeholders stated that they experienced this change as a result of participating in the iGA Beekeeping Project.
Societal norms		✓	This outcome had no relation to any societal norms.
Direct short term financial Impacts		✓	There was no short-term direct financial impact of this outcome.
Peer based norms	✓		Engaging in new hobbies, participating in activities that promote mental relaxation, and spending time with animals can lead to similar outcomes. Projects that cater to these pursuits can also yield comparable results.
Conclusion	✓		

Significance Criteria	Quantity	Value	Deadweight	Attribution	Relative Importance
	5	544,451₺	50%	25%	10
Conclusion	MEAN	HIGH	HIGH	MEAN	HIGH

Outcome 5: Being Sad and Disappointed

Relevance Criteria	Yes	No	Description
Policy based performance		✓	This outcome was not related to iGA's policy. It is an unintended negative outcome.
Stakeholder behaviour and concerns	✓		The stakeholder stated that the activities she conducts following the iGA Beekeeping Project caused this change.
Societal norms		✓	This outcome had no relation to any societal norms.
Direct short term financial Impacts		✓	There was no short-term direct financial impact of this outcome.
Peer based norms	✓		Hobbies centered around interactions with other living beings can undergo significant transformations when faced with the loss of life. For instance, the death of a beloved pet can evoke deep sentiments of sorrow and disillusionment within an owner who has forged a profound emotional connection.
Conclusion	✓		

Significance Criteria	Quantity	Value	Deadweight	Attribution	Relative Importance
	1	-544,451₺	0%	0%	10
Conclusion	LOW	HIGH	LOW	LOW	HIGH

Trainer

Outcome 1: Professional Improvement

Relevance Criteria	Yes	No	Description
Policy based performance	✓		In parallel with supporting the development of trainers and local trainees goal of iGA Beekeeping Project this outcome was intended.
Stakeholder behaviour and concerns	✓		Stakeholders stated that they experienced this change as a result of participating in the iGA Beekeeping Project and doing research as a result of questions of local trainees.
Societal norms		✓	This outcome was not relevant to a societal norm.
Direct short term financial Impacts		✓	There was no short-term direct financial impact of this outcome.
Peer based norms	✓		For the trainer, there were other opportunities to participate and improve his professional skills.
Conclusion	✓		

Significance Criteria	Quantity	Value	Deadweight	Attribution	Relative Importance
	1	70,118₺	66%	25%	7
Conclusion	N/A	LOW	HIGH	MEAN	MEAN

Supplier

Outcome 1: Professional Satisfaction

Relevance Criteria	Yes	No	Description
Policy based performance		✓	It was an expected outcome but not intended one. Emotional wellbeing is not relevant to iGA's policy.
Stakeholder behaviour and concerns	✓		Stakeholders stated that they experienced this change as a result of participating in the iGA Beekeeping Project and find an area to share his own experience on the related field.
Societal norms		✓	This outcome was not relevant to a societal norm.
Direct short term financial Impacts		✓	There was no short-term direct financial impact of this outcome.
Peer based norms	✓		For the supplier, there were other opportunities to participate similar projects and improve his professional satisfaction. Because he is experienced and well-known supplier and master beekeeper; other people ask for their experience regularly.
Conclusion	✓		

Significance Criteria	Quantity	Value	Deadweight	Attribution	Relative Importance
	1	80,000₺	50%	10%	8
Conclusion	N/A	LOW	HIGH	LOW	HIGH

Collaborated Firm

Outcome 1: Increase in Value in the Eyes of Society

Relevance Criteria	Yes	No	Description
Policy based performance	✓		iGA designed the Beekeeping Project by aiming to create value and positive impact for all stakeholders. This was an expected and intended outcome.
Stakeholder behaviour and concerns	✓		The Collaborated Firm stated that this project enabled them to be a part of social responsibility project and increase their knowledge in practicing social responsibility activities.
Societal norms	✓		The presence of socially responsible firms that are attentive to societal issues and development is positively received and supported by the community. Some segments -individuals with a high level of social consciousness- of society also prefer such businesses when making purchasing decisions.
Direct short term financial Impacts		✓	There was no short-term direct financial impact of this outcome.
Peer based norms	✓		The firm is a socially responsible firm and give importance to the training of beekeepers and participate other similar projects, even both design and implementation parts.
Conclusion	✓		

Significance Criteria	Quantity	Value	Deadweight	Attribution	Relative Importance
	1	1,000,000₺	66%	50%	9
Conclusion	N/A	HIGH	HIGH	HIGH	HIGH

PRINCIPLE 5:
DO NOT OVERCLAIM

"The principle of Do Not Overclaim means understanding and capturing your impact, meaning the outcomes that were caused by your intervention" . In order to avoid over-claiming information regarding counterfactual (deadweight), attribution, and displacement has been collected from stakeholders.

For each outcome stakeholders were asked;

- "How likely is it that this outcome would have happened anyway?" – (related to deadweight)

- "Who else contributes to this outcome?" - (related to attribution)
In order to understand whether "displacement" has occurred for any stakeholder group, an attempt was made to determine whether they have been adversely affected in another area or in another way.

Rigorous

For this analysis, a lower level of rigor was deemed sufficient to inform decision-making. The stakeholder approach was utilized to assess the potential outcomes in the absence of the iGA Beekeeping Project. The analysis determined that the project had a low level of irreversibility and did not involve any significant trade-offs, as discussed in the Displacement section.

Considering the specific context and characteristics of the project, a lower level of rigor allowed for a practical assessment of the project's impact on stakeholders. This approach provided valuable insights without compromising the reliability of the analysis, enabling informed decision-making while addressing any potential concerns regarding project irreversibility and trade-offs.

Deadweight and Attribution Discussions

Stakeholder Group	Outcome	Deadweight	Attribution
Local Trainees	Learning by Experience	40%	40%
	Increase in Honey Yield	25%	40%
	Increase in Self Confidence	25%	10%
	Emotional Wellbeing	50%	25%
	Being Sad and Disappointed	0%	0%
Trainer	Professional Improvement	66%	25%
Supplier	Professional Satisfaction	50%	10%
Collaborated Firm	Increase in Value in the Eyes of Society	66%	50%

a. Deadweight discussion

Stakeholders were asked if there could be other ways to experience the same outcome. The question was how much of it could be experienced in other ways. It was an open question.

As shown in the table above, the deadweight of outcomes experienced by Local Trainees are relatively low. The deadweight for other stakeholders, Trainer, Supplier and Collaborated Firm are higher.

For each deadweight defined outcomes, Local trainees reported that they could experience some part of the chance in different other ways:

Outcome 1: Learning by Experience:

Alternative ways: Participating in virtual beekeeping courses, participating in other face-to-face beekeeping courses like İSMEK offers, watching instructional videos, or learning from online resources.

Advantages of alternatives: Flexibility in terms of timing and accessibility

Disadvantages of alternatives: Limited hands-on experience, lack of direct interaction with experienced beekeepers, lack of equipment provided by iGA Beekeeping Project, and potential challenges in practical application without immediate guidance, lack of time to access face-to-face courses due to the distance of the location to district centre, additional course and equipment fees

Outcome 2: Increase in Honey Yield:

Alternative ways: Conducting individual research, studying books and publications on beekeeping techniques, and seeking advice from experienced beekeepers, participating in other face-to-face beekeeping courses like İSMEK offers.

Advantages of alternatives: Independence in learning and decision-making, the opportunity for personalized experimentation and adaptation

Disadvantages of alternatives: Potential for more trial and error, limited access to specialized equipment or resources, and the need for self-motivation and discipline, lack of time to access face-to-face courses due to the distance of the location to district centre, additional course and equipment fees

Outcome 3: Increase in Self Confidence:

Alternative ways: Joining online beekeeping communities or forums, participating in virtual mentoring programs, and seeking support from experienced beekeepers.

Advantages of alternatives: Access to a diverse range of experiences and perspectives, the ability to connect with a wider beekeeping community.

Disadvantages of alternatives: Lack of direct mentorship and face-to-face interaction, potential variations in the quality and reliability of advice received, and challenges in building trust and rapport virtually.

Outcome 4: Emotional Wellbeing:

Alternative ways: Engaging in nature-related activities, practicing mindfulness and meditation, and participating in local gardening or environmental groups.

Advantages of alternatives: Broader focus on overall well-being, opportunities to explore additional interests and hobbies, and potential connections with like-minded individuals.

Disadvantages of alternatives: Less direct association with beekeeping specifically, potential for less targeted emotional support, and the need for additional efforts to integrate emotional well-being practices with beekeeping activities.

Overall, while alternative ways can offer some level of experience and outcomes, they may not provide the same comprehensive and immersive learning environment as the iGA Beekeeping Project. The structured project provides face-to-face training, direct access to experts and specialized equipment, and ongoing support, which can significantly enhance the learning experience and increase the likelihood of desired outcomes. However, alternative approaches can still be valuable, especially for those who may not have access to the company's project or prefer more flexible learning options.

Trainer and supplier reported that they could experience the same outcomes by attending other beekeeping training programs or the programs designed with similar audiences. The high deadweight rate can be considered acceptable as they operate within the framework of their expertise within the program.

Collaborated Firm stated that other similar programs might create the same outcomes for it.

b. Attribution discussion

After defining the outcomes, stakeholders were asked "who else contributed to this outcome".

Local Trainees stated that in addition to the project stakeholders, there are several other contributors. Supportive family members; online sources such as Youtube channels, Facebook beekeeping groups; local experienced beekeepers are other contributors for the outcomes the Local Trainees experienced.

For **Trainer** and **Supplier**, the attribution rate is relatively lower (25% and 10% respectively). The reason behind that is they did not participate in other project at the same time. The other beekeepers from previous projects asked for help by phone calls during the iGA Beekeeping Project can be other contributors.

The attribution rate was higher (%50) for **Collaborated Institution** because its value creation activities were continuing during the iGA Beekeeping Project. Advertisements, visits to universities as guest speakers, the interaction of product quality with different new users through sales, and ongoing collaborations are other factors and stakeholders that contribute to this change.

Displacement

During the analysis, stakeholders were questioned about whether their participation in the project had replaced any other activities that could have led to similar outcomes. The displacement rate, indicating the extent to which the project's activities replaced other activities, was found to be 0% for all stakeholders. This implies that the project did not displace or replace any existing activities of the stakeholders. The outcomes achieved through the project were not a result of substituting or displacing other activities, but rather unique contributions made by the project itself.

PRINCIPLE 6:
BE TRANSPARENT

Every social impact assessment includes subjective decisions, which is inevitable. This analysis included judgments and assumptions as well. Even though those judgments were tested in sensitivity analysis, it would be immature to discuss about 'absolute value'.

This analysis focused on the main beneficiary group (local trainees) and the stakeholders that contributed to the implementation processes (trainer, supplier, collaborated firm). There is the risk of missing material outcomes that have been experienced by other related stakeholder groups such as children, husbands, and friends/relatives of local community and families, co-workers, other trainees and employees of stakeholders involved in implementation process. The risk associated might include missing unintended negative outcomes for these stakeholders. Therefore, it is important to focus on these extended stakeholders for the next analysis. In order to manage the impact well, iGA needs to understand what has changed for indirect stakeholders one step at a time.

It should be noted that beekeepers in the region are practising beekeeping with limited resources. The location is not an ideal one to practise it.

> **Climate constraint:** They need to implement both population growth and honey harvesting stages during the late spring-summer period, which is a shorter term.
>
> **Location constraint:** They are trying to practise beekeeping amidst the presence of the sea, lake, mining areas, residential areas, airports, and agricultural fields.

Additionally, local trainees experience death of most of the bees provided in scope of the Project, if the bees could survive, the cycle of change could be extended, and more trainees could experience different changes.

Further, executing some (if not all) interviews face-to-face might have enabled defining further outcomes (both positive and negative). This is due to the cultural preference in the Turkish society, which is favouring and bonding better in physical mode.

SENSITIVITY ANALYSIS

Estimations and/or subjectivity are inevitable for any social impact analysis. It is important to discuss these estimations and/or assumptions and test the implications on the SROI calculation of different scenarios and by changing significant factors.

Tests for the sensitivity analysis were guided by risks to the overall SROI ratio, consideration of alternate judgements made by researcher, and standard discounts for bias. These tests allow for the SROI ratio to be reported in a range while also examining the variability of valuations. For an SROI Analysis the standard requirement is to check changes to:

- estimates of deadweight, attribution and drop-off;
- financial proxies;
- the quantity of the outcome; and
- the value of inputs, where you have valued non-financial inputs.
- the duration of outcomes

The final SROI ratio was tested for sensitivity in the following ways:

For the monetization of the relative importance of outcomes, a stated preference approach was used for all stakeholder groups. Since the value of outcomes that were determined used a stated preference approach and contained assumptions, they also should be tested. Therefore, monetary value was increased and reduced by 25% for all positive outcomes for all stakeholder groups in the sensitivity analysis to eliminate **optimism bias.**

7 of 27 participants (26%) could not be included in the analysis. Increased and reduced the number of people experiencing each change by 26% to eliminate **nonresponse bias.**

The estimations of attribution, deadweight, drop off, and duration were made based on the participants' self-reported data, and judgments based on this data carry the risk of subjectivity and low rigour. Finally, the sensitivity analysis was conducted, and the values increased and reduced by 50%.

The results indicates that reduction in financial proxies, quantity, duration; and increase in attribution and deadweight are sensitive points because they decrease the SROI ratio. To ensure the utmost accuracy and reliability of the results, it is advisable to consider implementing an additional 3rd party verification process.

On the other hand, minor fluctuations in drop-off rates may not warrant immediate action or concern. Therefore, any slight increase or reduction in drop-off can be deemed negligible and may not necessitate immediate attention or intervention.

When all of the changes of the rates are applied, the SROI ratio is **still higher than 1:1. The results of the Sensitivity Analysis show that range of TL 5.40 – TL 13.79 of social value created for every TL 1 invested in iGA Beekeeping Project.**

Item	Test	Outcomes Affected	Current SROI	New SROI	Difference
Financial Proxies	Reduce financial proxies by 25%	All positive outcomes	TL 9.25	TL 6.20	-TL 3.05
	Increase financial proxies by 25%	All positive outcomes	TL 9.25	TL 12.30	+TL 3.05
Quantity	Reduce quantity by 26%	All outcomes	TL 9.25	TL 6.85	-TL 2.40
	Increase quantity by 26%	All outcomes experienced by local trainees	TL 9.25	TL 11.66	+TL 2.41
Attribution	Reduce attribution by 50%	All outcomes	TL 9.25	TL 11.79	+TL 2.54
	Increase attribution by 50%	All outcomes	TL 9.25	TL 6.71	-TL 2.54
Deadweight	Reduce deadweight by 50%	All outcomes	TL 9.25	TL 13.10	+TL 3.85
	Increase deadweight by 50%	All outcomes	TL 9.25	TL 5.40	-TL 3.85
Drop off	Reduce drop off by 50%	All outcomes	TL 9.25	TL 9.20	-TL 0.05
	Increase drop off by 50%	All outcomes	TL 9.25	TL 9.14	-TL 0.11
Duration	Reduce duration by 1 year	All positive outcomes with their duration > 1 year	TL 9.25	TL 5.90	-TL 3.35
	Increase duration by 1 year	All positive outcomes	TL 9.25	TL 13.79	+TL 4.54

PRINCIPLE 7: VERIFY THE RESULTS

In order to minimize the risk of impact washing and ensure the accuracy of the analysis, a verification step was undertaken by discussing the results with stakeholders before submitting the report for assurance to Social Value International (SVI).

Stakeholder involvement in the verification process is crucial to avoid both overvaluation and undervaluation of the project's impact. Efforts were made to engage stakeholders in the verification process wherever possible. Individual discussions were conducted with local trainees and trainer considering their unique roles and perspectives in the program. Due to logistical constraints, the discussions were held one-on-one, ensuring each stakeholder's input was considered.

Recognizing that creating value is an ongoing and dynamic process, it was important to have dialogue with stakeholders to gain insights and feedback on the analysis results. The Sustainability Manager, who received training in Social Value and SROI Analysis in 2021, took the initiative to disseminate the information to all departments within the company and engage in discussions with stakeholders. This proactive approach is expected to enable iGA to make informed decisions and optimize the value of the project in the future.

For iGA, the verification process is not a one-time event but a continuous effort to ensure transparency, accountability, and further positive impact. It serves as a tool to foster ongoing dialogue and improve the effectiveness of the program.

PRINCIPLE 8:
BE RESPONSIVE & CLOSING REMARKS AND RECOMMENDATIONS FOR FURTHER IMPLICATIONS

Principle 8: Be Responsive is about how information should be used to inform decisions that optimise impacts on wellbeing for all materially affected stakeholder groups. It also ensures that the level of rigour in the accounts is proportionate for the decisions that the account is designed to inform.

This principle requires organisations to implement an impact management approach based on three types of decisions:

- Strategic - setting impact goals in alignment with stakeholder needs and societal goals;
- Tactical - choosing activities that best achieve impact goals; and
- Operational - making improvements to existing activities

The SROI Analysis conducted for the iGA Beekeeping Project provides a valuable platform for iGA to consistently and effectively respond to data insights. This enables the organization to make informed decisions at strategic, tactical, and operational levels, with the ultimate aim of optimizing the project's impact on the wellbeing of all stakeholder groups that are materially affected. By leveraging the findings from the SROI Analysis, iGA can proactively adapt and improve its approaches to ensure positive outcomes for the diverse range of stakeholders involved.

The segmentation data of Local Trainees indicates a diverse group of participants with various backgrounds and interests. This diversity also led to differences in the levels of understanding and application of information among local trainees. As operational decisions, iGA can consider the following points:

- ✓ To enhance the effectiveness of the beekeeping training project, it is recommended to tailor the program content, delivery methods, and support services to cater to the specific needs and aspirations of the participants. iGA should take into account factors such as trainees' literacy levels, age, and fundamental knowledge gaps to tailor the training content and delivery accordingly.

- ✓ Regular evaluations and feedback collection can further inform the project's development and ensure its continued relevance and impact.

To overcome the constraints mentioned in the Principle 6: Be Transparent part, iGA can consider the following points as strategic decisions;

- Providing guidance on selecting suitable areas for beekeeping, considering factors such as proximity to sea, lake, mining areas, residential areas, airports, and agricultural fields could increase the impact of the Project. On the other hand, iGA's attempts to arrange a common area for beekeeping in collaboration with Forestry Directorate was not accepted by local trainees due to disagreements among the trainees, distance and transportation problem, and security concerns about the location. These points might be re-evaluated with local trainees.

- İGA can coordinate with environmental organizations or ecological experts to identify suitable areas for floral planting initiatives that align with the objectives of the Wildlife Support Program. By creating floral habitats that provide abundant nectar and pollen sources, the project can enhance honeybee forage availability and contribute to biodiversity conservation.

- Additional trainings could be designed on managing bee colonies during different weather conditions, ensuring that beekeepers understand how to maximize population growth and honey production during the limited time period.

- Introduction of the concept of mobile beekeeping, where beekeepers can move their hives to different locations based on seasonal forage availability might allows beekeepers to take advantage of diverse floral resources and maximize honey production while promoting pollination services in various ecosystems.

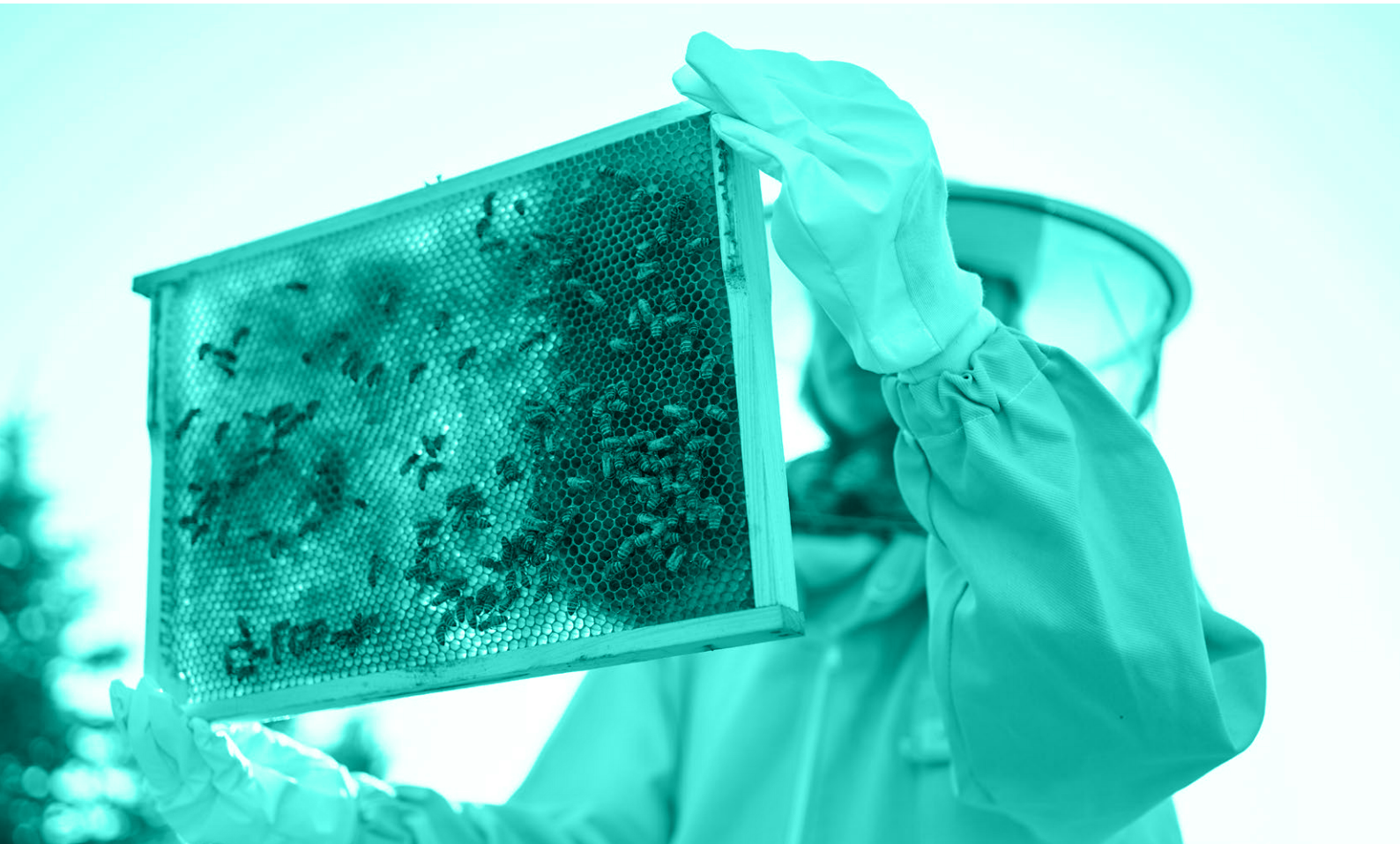
Because beekeeping is a long-term process and the starting point of the iGA Beekeeping Project is a new one; more significant changes can be observed in the long run.

There are other examples that private sector feels responsible on biodiversity protection and beekeeper empowerment. For example;

The Dublin Airport Beekeeping Project is an initiative focused on promoting beekeeping and supporting bee populations in and around Dublin Airport. The project involves establishing beehives in designated areas within the airport premises, where bees can thrive and contribute to local ecosystems. The project aims to raise awareness about the importance of bees and their role in pollination, as well as educate airport staff, visitors, and the surrounding community about beekeeping practices and environmental conservation. By implementing this project, the Dublin Airport seeks to create a sustainable and bee-friendly environment while fostering a positive relationship with the local community and stakeholders .

- To increase the impact, iGA might think about collaboration and experience sharing meetings with the private sector companies working towards similar mission in terms of social responsibility.

By leveraging the insights obtained from this analysis, iGA can effectively inform and guide its tactical decision-making processes regarding future investments. The results provide valuable information that can be utilized to optimize the value generated by these investments. By considering the findings and recommendations derived from the analysis, iGA can make strategic choices that align with its objectives and goals, ensuring that resources are allocated efficiently and effectively to maximize the desired outcomes and overall value creation. This data-driven approach empowers iGA to make informed decisions that have the potential to yield significant benefits in terms of value optimization for the organization.



APPENDIX

A. Question Set

- How have you been involved in the iGA's activities / collaborate with iGA's activity? What was the problem and the solution that you expected?
- What did you contribute to involve in the iGA's activity / collaborate with iGA's activity (and how much)?
- What activity/activities did you experience?
- What changes have you experienced? What do you do differently as a result?
- So, what happened next? / Tell me more / Why is that important to you?
- What was the situation before you join the course / collaborate with the iGA's activity (0-10 scale)
- What is the situation now? (1-10 scale)
- Were all the changes positive? If not, what were the negative changes?
- Were all the changes expected or was there anything that you didn't expect that changed?
- Do you think anyone else has experienced any changes as a result?
- What would have happened to you if you hadn't been involved in iGA's activity/ collaborate with iGA's activity? Would you have experienced the same change? If yes, how much of it?
- Did anyone else contribute to the change? How much?
- Did you have to give up anything to take part in the activity?
- Were you getting similar support from somewhere else?
- How long did the change last for? Imagine you leave the iGA's activity and we are 2 years or 5 years from now, do you think you'll still be experiencing the change?
- How important was this change to you? (1-10 scale)
- Value Game:
  a. Imagine that you get (3 to 5) presents for your birthday/new year. Those presents should be for yourself and should be the things that are meaningful and important for you.

  b. Please match the list of the things that are important to you and the changes you have experienced.

B. SROI Formula

Calculation of the Impact

The formula is given below to calculate impact by including deadweight, attribution, drop-off, and displacement.

Impact = (outcome quantity x financial proxy) * (1 – deadweight) * (1 – attribution) Impact in year 1: This is the same as the impact calculated at the end of the project.

Impact in year 2: impact = year 1 – drop off %

Impact in year 3: impact = year 2 – drop off %

Impact in year 4: impact = year 3 – drop off %

Impact in year 5: impact = year 4 – drop off %

Calculating Social Return on Investment

In this stage, the Net Present Value (NPV) is calculated first. The NPV and SROI rate is calculated in accordance with the formulas below.

NPV = present value of benefits (PV)* – value of investment *PV = value of impact in year 1 / (1+r) + value of impact in year 2 / (1+r)2 + value of impact in year 3 / (1+r)3 + value of impact in year 4 / (1+r)4 + value of impact in year 5 / (1+r)5

r = discount rate (The official data from the Central Bank of Turkey is used)
SROI RATIO = Present Value / Value of Inputs
Net SROI RATIO= Net Present Value / Value of Inputs

The source of the formulas is The SROI Network guidebook . When the related values are inserted in the formula, the SROI ratio is calculated as **1:9.25.**

C. The List of Products and Their Monetary Value

Stakeholders	Things that are important to have for stakeholders	Value (TL)	Source
Local Trainees	150 hives of bees	127,500	Link
	3 days' vacation in Antalya, for 4 people	40,000	Link
	1 acre of land close to the chestnut forest	1,250,000	Link
	1 hive of bees	850	Link
	1 year loan for a mid-segment car	500,000	Link 1 & Link 2
	Cash	500,000	stakeholder
	1-year rent (approx. TL 2,000 x 12)	24,000	stakeholder
	1-year income	870,000	stakeholder
	To implement the planned project	1,500,000	stakeholder
	35 hives of bees	29,750	Link
Trainer	15 days' vacation in Blacksea Region, for 2 people	70,188	Link
Supplier	Cash	80,000	stakeholder
Collaborated Firm	Refurbishment of a machine in analysis lab	1,000,000	stakeholder


iGA