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For information on UNCTAD's BioTrade Initiative, please visit https://unctad.org/biotrade, or send an inquire to biotrade@unctad.org.

Acronyms and Abbreviations

ABS-I	Access and Benefit Sharing Capacity Development Initiative
BCA	Biodiversity Conservation Agency (Viet Nam)
BioEmprende	Centre for the Promotion and Facilitation of Biobusinesses (Ecuador)
B2B	business-to-business
B2C	business-to-consumer
CAF	development bank of Latin America
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
FLEDGE	Forum for Law, Environment, Development and Governance
GDP	gross domestic product
GNI	gross national income
ILO	International Labour Organization
IMF	International Monetary Fund
ITC	International Trade Centre
LDC	least developed country
LLDC	landlocked developing country
MSME	micro, small and medium enterprises
NGO	non-governmental organization
OECS	Organisation of Eastern Caribbean States
P&C	Principles and Criteria (BioTrade)
PromPerú	Commission for the Promotion of Exports and Tourism of Peru
SDG	Sustainable Development Goal
SECO	State Secretariat for Economic Affairs (Switzerland)
SSC	Stakeholders Steering Committee (BioTrade)
SIDS	small island developing State
UEBT	Union for Ethical BioTrade
UNCTAD	United Nations Conference on Trade and Development
UTPL	Technical Private University of Loja (Ecuador)
WHO	World Health Organization
WTO	World Trade Organization

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Executive summary

This report examines the implications of the COVID-19 pandemic for stakeholders involved directly or indirectly in the production and trade of biodiversity-based products and services, including those sustainably sourced and traded as BioTrade products and services. It is based on the findings of a survey questionnaire that was circulated between 22 December 2020 and 28 February 2021, and resulted in a total of 307 valid, usable responses. A majority of these came from developing countries, and a variety of different institutional groupings were represented – such as the private sector, the government, non-governmental organizations (NGOs), civil society, etc. The distribution of gender among respondents was fairly balanced, with men slightly outnumbering women, 56 to 43 per cent. The remaining 1 per cent of respondents preferred not to disclose their gender. While biodiversity constitutes the primary focus of nearly three quarters of respondents, 73 per cent reported directly or indirectly supporting the implementation of the BioTrade Principles and Criteria (P&C). Finally, respondents' trade experience is also diverse, with 58 per cent reporting being involved in international trade while 35 per cent had their activities centred only around domestic markets.

This study starts with an analysis of the *opportunities* provided by the pandemic to certain organizations by investigating the nature of positive impacts, in particular in terms of shifts in demand, access to markets and increased sustainability efforts. It then looks at the *challenges* respondents' organizations faced since the advent of the pandemic, in terms of different types of impacts, their duration and the extent of their severity, as well as how it affected their revenues. Finally, the report focuses on the different types of *solutions* implemented by respondents' organizations to navigate the exceptional circumstances brought by the pandemic. Solutions specifically relate to measures implemented in response to the pandemic, to the shift towards the digital space in the face of reductions in personal mobility and *in-loco* operations. It also assessed the different forms of government support specific to the pandemic that were provided to stakeholders and their impacts. The report then concludes with a set of recommendations extrapolated from the analysis of the survey responses.

One important aspect to note is that there is no one way the pandemic affected everyone. Responses vary between respondents from different institutional groupings, between BioTrade and non-BioTrade respondents as well as between respondents within these groups. Where some perceived difficulties others considered these as opportunities and, ultimately, each experience is individually unique to each respondent. Nevertheless, by analysing the responses as aggregates it was possible to identify some trends, for instance which strategies were likely most successful in increasing resilience to the pandemic and seizing the opportunities it provided.

Opportunities

The COVID-19 pandemic generated some opportunities for many of the actors involved in the value chains of biodiversity-based products and services. 17 per cent of respondents reported being positively affected by the pandemic between March and December 2020, relative to the same period in the previous year, with BioTrade-related respondents from the private sector reporting having perceived positive impacts from the pandemic in higher numbers than their non-BioTrade counterparts. Notably, the prevalence of durable effects is higher among respondents reporting an overall positive impact than among those experiencing an overall negative impact.

17 per cent of sampled private sector organizations report that the COVID-19 pandemic increased their access to new business opportunities, including by diversifying into new local or export markets, new sectors, and new products. Additional opportunities were identified on the demand side. In fact, nearly half of respondents reported increases in demand for products and services that are perceived as sustainable or as healthy, while over a quarter reported increases in demand for local or ethical products and services. BioTrade-related respondents have seen an increase in demand for products perceived as sustainable, healthy, ethical, and local in significantly larger numbers than their non-BioTrade counterparts. However, the share of companies experiencing increases in overall sales (15 per cent) remains substantially lower than the share of companies experiencing decreased sales (58 per cent). Furthermore, opportunities were also identified on the supply side, with nearly a third of respondents mentioning increases in efficiency due to switching to digital alternatives in their operations to face the new circumstances brought by the pandemic.

The global health crisis and economic downturn engendered by the COVID-19 pandemic also encouraged many organizations to reassess their sustainability strategies and practices. In fact, 38 per cent of private sector organizations surveyed reported enhancing efforts towards more sustainable practices and strategies, in response to the pandemic, either within the organization itself, along its supply chain or both. Only 10 per cent of respondents reported relaxing efforts to improve the sustainability of operations. There is a negative relationship between the positive impacts emerging from the pandemic and the decrease in the implementation of sustainable practices and strategies by respondents. Thus, organizations that decreased their sustainability efforts reported positive impacts in lower numbers than average. While no causal effect can be extrapolated with certainty from the comparison of sustainability efforts and positive impact, this correlation seems to point towards a relationship between these two elements.

Challenges

Although the COVID-19 pandemic generated some opportunities for respondents and their organizations, it also created challenges for the collection, production, processing, distribution, commercialization, certification, support and study of biodiversity-based products and services. Three quarters of surveyed organizations and individuals reported that the health crisis and concomitant economic downturn had a negative impact on their operations between March and December of 2020, relative to the same period in the previous year. Particularly impacted were public sector organizations.

Similarly, respondents that support the implementation of the BioTrade P&C reported suffering from the negative impacts of the pandemic at a higher share than their counterparts who do not implement BioTrade – a statement holding for each of the institutional groupings surveyed – as well as having perceived these negative impacts to a more significant extent. Nevertheless, BioTrade-related respondents seemed to recover faster from these impacts than non-BioTrade respondents. This is particularly evident for the private sector associated to BioTrade, with a difference of 10 percentage points (51 per cent for BioTrade-related respondents versus 61 per cent for non-BioTrade ones).

Solutions

The survey also proposed to investigate the solutions that respondents' organizations put in place to address the challenges and harness some of the opportunities brought by the pandemic. In addition to generic responses to the COVID-19 pandemic, it also focused on digital solutions to the pandemic as well as on the role of government support.

Responses to COVID-19

The most widely implemented activities to COVID-19 that respondent organizations reported are remote working arrangements, health and safety measures in the workplace and, to a lesser extent, switching to digital solutions such as teleconferencing and e-learning platforms. From a regional perspective, remote work arrangements were implemented predominantly in Europe and in the Americas. In Asia and especially in Africa fewer respondents reported having implemented measures of this type. Health and safety measures in the workplace were widely implemented globally, although to a lesser extent in Europe than elsewhere. Adopting or upgrading digital solutions was reported most by European and Asian respondents, followed by those from the American continent and then Africa.

Looking at which of the responses implemented against COVID-19 correlates the strongest with reports of positive impacts from the pandemic, the most successful strategies to emerge from the sample include diversification efforts. These include new distribution channels, new products and lines of work, and new partnerships, as well as verging into or upgrading sustainable business models and practices. For BioTrade-related respondents, these measures were linked to even higher rates of positive impacts than each of the institutional groups, as well as the sample average. While it is not possible to establish a direct causation between these measures and the positive impacts perceived by those who implemented them, the consistency in which they appear across all sectors and levels of analysis provide a sufficient base to infer a causal link to some extent.

Overall, when prompted about which of the strategies they implemented were the most successful in coping with the pandemic or to capture the opportunities it generated, respondents predominantly mentioned strategies linked to implementing preventing measures and biosecurity protocols, switching to digital solutions, adjusting working arrangements, cooperating with partners and peers, and providing direct support to communities or suppliers. However, one of the aspects emerging from the responses to the questionnaire is that there is no one size fits all strategy; successful and unsuccessful strategies do vary among respondents. In fact, some of the actions that were listed as successful by some, not only did not bring any benefits to others but also negatively affected their business operations, their liquidity, or their access to current and potential markets and clients. These included, for instance, difficulties in collecting produced goods from remote locations, monitoring projects on the ground or guaranteeing quality remotely, as well as e-payments to suppliers, in addition to the extensive time and resources needed to develop and commercialize new products to seize current market opportunities.

Digital solutions

COVID-19 restrictions, imposed by governments to contain and limit the spread of the pandemic, meant that, wherever possible, personal contacts and interactions were avoided. In this context, digital solutions to these limitations have boomed since the advent of the pandemic, most notably in terms of communication technologies, digital marketing and electronic sales and transactions.

Private sector respondents reported having to implement remote working arrangements, as well as switching to electronic platforms to conduct business activities. Of these, those presenting the strongest linkages with positive impacts from the pandemic were using teleconferencing platforms and switching to e-payment and e-commerce technologies. Additionally, social media and online marketing platforms were those that provided sellers with the highest revenue growth during the pandemic, in contrast to sales channels such as third-party online marketplaces or online classified ads.

Teleconferencing solutions, both within and outside the organization, as well as remote working arrangements more generally, were also the digital solutions to the pandemic that were overwhelmingly reported by government and support organization respondents. However, it is the quality of the internet broadband coverage the appeared to mostly influence whether organizations had experienced overall positive impacts from the pandemic, as specified above, or not.

The digital solutions implemented the most in response to the pandemic were largely the same between BioTrade-related respondents and non – teleconferencing and remote working arrangements were also selected by most BioTrade-related respondents. However, the sales channels through which this specific group of respondents experienced the highest revenue growth varied: traditional as well as telephone channels figured much more predominantly among their responses. In particular, sales through the social media platform Facebook were selected by three times as many BioTrade-related respondents with respect to their non-BioTrade counterparts.

Government support

Nearly half of respondents reported not receiving any form of support during the pandemic. While for 21 per cent the reason was that they did not apply for any, one quarter of respondents could not secure any despite needing it – either because there was no support available or because, if available, they faced difficulties in obtaining it. The share of those not having perceived government support is highest for private sector respondents (53 per cent), while only 8 per cent of respondents from government institutions stated not providing any form of support – a significant gap.

The report also compared the forms of government support that respondents considered as more needed by their organizations with those they actually received. Conspicuous differences can be observed not in the order of importance of the measures but in their scale. Relatively large gaps exist between the number of respondents stating they need a specific support measure and the number of those who obtained it. Such gaps were identified across most measures and across responses from all institutional categories, indicating that while governments

succeeded at identifying which types of support were the most needed ones, they seemingly failed at providing them at the necessary scale and accessible to the target group.

The main recommendations arising from this study are summarized below:

- **Recommendation 1: Improve access to and availability of government support**. Governments need to ensure that the needs and circumstances of biodiversity-based stakeholders are considered when designing and implementing support measures aimed to mitigate the impacts of external shocks and support its recovery, e.g., post-COVID-19 recovery. Efforts are needed not only ensure that the flow of information reaches biodiversity-related stakeholders, particularly those in remote and rural areas, but that there is also assistance to guide or coach them in accessing this support.
- **Recommendation 2: Support private sector stakeholders in accessing markets emerging from the pandemic** and to generate a sustainable economic transformation. The pandemic can create opportunities for businesses to develop sustainable practices, strategies, as well as products and services. An enabling policy environment as well as a network of support organizations can assist businesses in this transformation.
- **Recommendation 3: Support biodiversity-based stakeholders**, particularly SMEs and Micro-SMES and rural communities in developing and/or implementing digital solutions. Benefiting from and using digital solutions is essential for all stakeholders in the current and post-pandemic era, and efforts must be sought to ensure that all actors, including SMES, Micro-SMEs and rural communities are not left behind.
- **Recommendation 4: Foster the implementation of diversification strategies**. To cope with the pandemic and be more resilient, stakeholders have implemented a series of diversification strategies. However, support is needed to assist them in developing effective strategies, by providing information, knowledge and expertise that is not necessarily available for all actors.
- **Recommendation 5: Conduct regular updates and follow-ups to the responses** which will enable to compare and assess the impact of the pandemic to the target stakeholders but also assess government support measures that are more adequate to address the needs of biodiversity-stakeholders.

Introduction

The coronavirus disease of 2019 (COVID-19) has triggered an unprecedented global health crisis and economic downturn, with profound consequences for governments, businesses and civil society. Over one year into the pandemic, the human toll is staggering: 4.3 million lives have been lost to COVID-19 and 150 million cases have been confirmed (WHO, 2021). The economic consequences have also been formidable: global gross domestic product (GDP), trade, and working hours contracted by 3.5 per cent, 5.3 per cent, and 8.8 per cent, respectively, in 2020 (IMF, 2021; WTO, 2021; ILO, 2021b). This report examines the implications of the COVID-19 pandemic for stakeholders involved directly or indirectly in the trade of biodiversity-based products and services, including BioTrade products and services. It identifies the key challenges and opportunities posed by the pandemic, as well as the solutions implemented by the private sector, governments, support organizations and individual experts.

Biodiversity is the variety of species on Earth, including plants, animals, fungi and bacteria. Biodiversity-based products result from the collection, production or transformation of biological resources. They are found in industries as varied as food and beverage, cosmetics, pharmaceuticals, paper, textiles, energy, and handicrafts. Services based on biodiversity are those that derive value from genetic resources, species and ecosystems, such as nature-based tourism, pollination, and water treatment.[1] The sustainable production, use and trade of biodiversity-derived products and services provide developing countries with valuable opportunities for biodiversity conservation, poverty reduction, economic diversification, value addition, improved livelihoods, and the empowerment of vulnerable groups, including women and ethnic minorities.

BioTrade products and services are a subset of biodiversity-based products and services. The concept of BioTrade applies to goods and services that are derived from biodiversity under specific environmental, social and economic sustainability guidelines known as the BioTrade Principles and Criteria (P&C). The P&C are the core foundation guiding the implementation of activities of the BioTrade Initiative of the United Nations Conference on Trade and Development (UNCTAD) as well as its partners and beneficiaries (UNCTAD, 2020a).

The present report was produced under UNCTAD's "Global BioTrade Facilitation Programme: Linking Trade, Biodiversity and Sustainable Development", a four-year programme (2018–2022) funded by the Swiss State Secretariat for Economic Affairs SECO. The programme is implemented in partnership with the Secretariats of the Convention on Biological Diversity (CBD) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the International Trade Centre (ITC), the development bank of Latin America, the Union for Ethical BioTrade (UEBT), Helvetas Swiss Intercooperation, the ABS Capacity Development Initiative (ABS-I), and a network of national and regional partners, including ministries of trade, environment and their attached agencies, trade promotion organizations, academia and civil society, among others.[2] The programme aims to contribute to the advancement of the Sustainable Development Goals (SDGs), including SDG 15 (life on land), SDG 12 (sustainable production and consumption), and SGD 17 (partnership for the goals), as well as the relevant Aichi and forthcoming post-Aichi biodiversity targets. It does so by strengthening coordination and knowledge sharing among stakeholders, creating an enabling policy environment for BioTrade companies, and facilitating market linkages. BioTrade is therefore contributing for countries to diversify their economies through the production and trade of biodiversity-based products and services.

At the third BioTrade Stakeholders Steering Committee (SSC) meeting, held on 5 May 2020, BioTrade partners discussed the implications of the COVID-19 pandemic for the production and commercialization of biodiversity-based products and services, as well as the priority areas for collaboration. As a result of these discussions, UNCTAD was requested to explore the possibility of conducting a global assessment of COVID-19 challenges,

[1] Since goods produced or derived from minerals, ores, and metals, including fossil fuels, are not considered biodiversity-based products, they are expressly excluded from the scope of this report.

[2] For more information on the programme, visit https://unctad.org/project/global-biotrade-facilitation-programme-linking-trade-biodiversity-and-sustainable.

opportunities, and solutions, in collaboration with interested partners and organizations (UNCTAD, 2020b). The current report and the global survey were produced in response to this specific request from the SSC.

This report is organized in six sections. Section I describes the methodological approach, including the research design process and the collection processes. Section II examines the sample and its relationship to the population. Sections III, IV and V analyse the key finding surveys regarding the key challenges, opportunities, and solutions in the context of the COVID-19 pandemic. Section VI presents recommendations and concludes.

SECTION I: METHODOLOGY, SAMPLE, AND RESPONDENTS' CHARACTERIZATION

1. Methodology

The current report is based on the findings from a global survey on the implications of the COVID-19 pandemic on organizations and individuals involved in the collection, production, processing, distribution, commercialization, purchase, certification, support and study of biodiversity-based products and services. Conducted by UNCTAD from 22 December 2020 to 28 February 2021, in collaboration with BioTrade partners, the survey sheds light on the challenges and opportunities created by the pandemic, as well as the corresponding solutions implemented by stakeholders.

The sections below provide details on the research methodology, including the target population, sample size, sampling method, and the survey type, design, structure, and distribution.

Population

The target population consists of four groups of stakeholders that work with biodiversity-based products and services with a global coverage. The first group includes private sector actors, such as collectors, fishers, hunters, producers, processors, manufacturers, distributors, traders, exporters, importers, and users. The second group includes public sector actors, such as representatives from government entities focused on the environment, agriculture, forestry, fisheries, tourism, trade, and development. The third group is formed by support organizations, understood here as academic and research institutions, business support organizations, certification bodies, non-governmental organizations (NGOs), and international organizations. Finally, individual experts are consultants and other individuals that perform work connected with biodiversity-based products or services, but who are not professionally affiliated with an overarching organization.

Sample size

For this study, the population size includes all individuals that work with biodiversity-based products and services, including collectors, fishers, hunters, producers, processors, manufacturers, distributors, traders, exporters, importers, users, government officials, researchers, certification agents, among others. Given the global coverage of the study, it is difficult to pinpoint an actual size, especially since it is a large population. According to the International Labour Organization (ILO), 906 million people worked in agriculture alone in 2019 (ILO, 2021a). Millions more worked in forestry, fisheries, phytopharma, handicrafts, nature-based tourism, and other biodiversity-based sectors.

Several formulas have been proposed to calculate the adequate minimum sample size for surveys. Using the sample size calculator provided by SurveyMonkey,[3] a very large population size, a confidence level of 95 per cent and margin of error of 6 per cent, the minimum sample size for the present study is 267 observations. Table 1 contrasts alternative minimum sample sizes for confidence levels of 95 per cent and 90 per cent and margins of error of 5 per cent, 6 per cent and 7 per cent.

Table 1: Minimum sample size

Confidence interval	Margin of error		
	5 per cent	6 per cent	7 per cent
95 per cent	385	267	196
90 per cent	273	160	139

[3] The formula used by SurveyMonkey (SurveyMonkey, 2021) is $n = \frac{\frac{z^2 p(1-p)}{e^2}}{1+\left(\frac{z^2 p(1-p)}{e^2 N}\right)}$, where n is the sample size, N is the population size, e is the margin of error, z is the z-score associated with a given confidence interval, and p is an estimated value of the proportion. In the absence of a preconceived idea of the value of p, the conservative value of 0.5 is used, as it maximizes the sample size calculation.

The survey took form of a questionnaire, which was implemented on-line and open to any interested participant. The choice of an on-line questionnaire was due to its low cost, flexibility, and the ability to potentially reach participants in any region of the globe. One drawback of this method is that it is only accessible to actors with access to telecommunications equipment and services. Thus, resource-poor stakeholders from remote regions are less likely to take part in the survey.

Survey design and structure

The survey questionnaire was designed by UNCTAD and peer reviewed by BioTrade partners[4] and some survey questions were revised or added based on their feedback. Some questions were also inspired on the "COVID-19 Business Impact Survey" developed by ITC.

The survey was structured around one screening question and four independent questionnaires, one for each of the study's target groups: the private sector, the government, support organizations, and individual experts. Further information on the content of the survey can be seen in Annex 3.

Survey distribution

The online survey was implemented through Google Forms and distributed via email to 1.549 individuals such as BioTrade partners, other organizations, and independent experts on 22 December 2020. Public calls for participation in the survey were also published in social media platforms (Facebook, LinkedIn, and Twitter) and individualized invitations were sent by email, Facebook, LinkedIn, and WhatsApp. Additionally, BioTrade partners disseminated also supported the dissemination of the survey within their own networks in Asia, Africa, the Americas and Europe. Replies to the survey were received until 28 February 2021.

Furthermore, the survey questionnaire was available in four languages: English, French, Portuguese, and Spanish. The diversity of languages encouraged participation from non-English speakers, especially among small businesses and NGOs. English accounted for 50 per cent of the survey responses, Spanish for 30.5 per cent, Portuguese for 15 per cent, and French for 4.5 per cent.

Sampling method

A non-probability sampling method was used, as not every member of the population had a chance of participating in the survey. Individuals were informed and invited to participate in the survey following non-random criteria. Non-probability samples are cheaper and easier to implement but are more likely to present sampling bias. As a result, extrapolations from the sample to the population are less powerful than when probability sampling techniques are used. However, even when non-probability sampling methods are used, every effort should be made to ensure that the sample is a good reflection of the population. The following section examines the representativeness of the sample relative to various facets, including focus on biodiversity, development status, regional coverage, gender, size, sector, and others.

[4] The partners include: the Biodiversity Conservation Agency (BCA, Viet Nam), the Ministry of Environment of Peru, the Ministry of Environment and Sustainable Development of Colombia, the Ministry of Environment, Water and Ecological Transition of Ecuador, the Commission for the Promotion of Exports and Tourism of Peru (PromPerú), SECO, ITC, the development bank of Latin America (CAF), ABS-I, the Centre for the Promotion and Facilitation of Biobusinesses (BioEmprende) and the Technical Private University of Loja (UTPL, Ecuador), the Forum for Law, Environment, Development and Governance (FLEDGE), and Véronique Rossow (independent expert)

2. Sample

The global survey on the implications of COVID-19 on biodiversity-based products and services received 382 responses during the ten-week period between 22 December 2020 and 28 February 2021. A total of 307 valid responses originated from organizations or individuals involved in the collection, production, processing, distribution, commercialization, purchase, certification, support, or study of biodiversity-based products or services. The 75 remaining responses were deemed invalid due to repetition or incompleteness, or because the respondent's line of work was not linked to biodiversity-based products or services.

The sample of 307 valid responses included participants from four broad institutional categories: the private sector, support organizations[5], the government, and individual experts (figure 1). The first two categories encompass nearly three quarters of all valid responses, equally distributed between the private sector and support organizations (each accounting for 37 per cent of valid responses). The public sector accounted for an additional 20 per cent of valid responses, and individual experts for the remaining 6 per cent. Since only 18 participants identified as individual experts it is not adequate to conduct a meaningful statistical analysis based on their responses, especially for those questions having a relatively large number of available options to choose from. Nevertheless, individual experts have been included as an aggregate wherever pertinent to provide a means of comparison with the other institutional groups.

Involvement in activities related to biodiversity and the sharing of benefits

Figure 1: Sample by institutional category

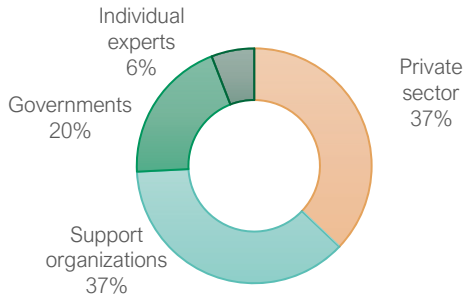


Figure 2: Sample by focus on biodiversity-based products and services

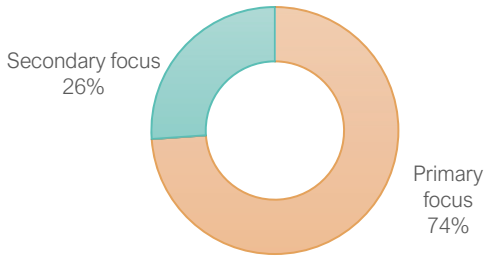
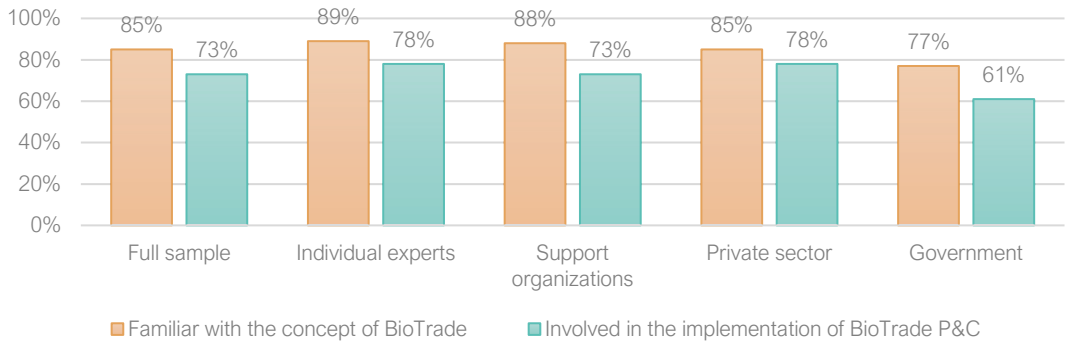


Figure 3: Familiarity with BioTrade and involvement in the implementation of BioTrade P&C



Nearly all respondents (96 per cent) reported being involved in the implementation of sustainable practices for the conservation and sustainable use of biodiversity and the sharing of benefits derived from its use. Moreover, biodiversity-based products or services are the primary focus of work for 74 per cent of the institutions and

[5] Support organizations include academic and research institutions, business support organizations, NGOs and international organizations.

individuals in the sample, and a secondary focus for 26 per cent (figure 2). The share of institutions or individuals with a primary focus on biodiversity-based products or services varied across institutional categories: it was above average in the private sector (84 per cent), and below average among public institutions (62 per cent), support organizations (70 per cent) and individual experts (72 per cent).

Most respondents (85 per cent) were familiar with the concept of BioTrade, and a significant share (73 per cent) are what in the context of this paper will called BioTrade-related respondents – meaning respondents from institutions that are implementing or supporting the implementation of the BioTrade P&C.[6] On the other hand, familiarity and involvement with BioTrade varied between institutional categories, with individual experts and support institutions showing average or higher results, while public institutions showed lower ones. (see figure 3). In particular, respondents affiliated with government institutions were between 12 and 17 percentage points less likely to be involved in the implementation of BioTrade P&C than their counterparts in the private sector and support organizations.

Country classification

In total, 64 countries were represented in the survey, of which 52 (83.4 per cent) are developing countries, 11 are developed countries, and one is a transition economy (figure 4). [7] In addition, 14 per cent of the responses were submitted by organizations and individuals based in developed countries, many of which also have operations in developing countries. Transition economies accounted for only 0.3 per cent of valid responses, while actors with global presence accounted for 2.3 per cent.

Figure 4: Sample by development status

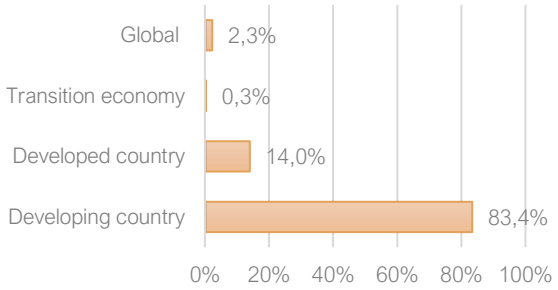


Figure 5: Sample by developing country categories

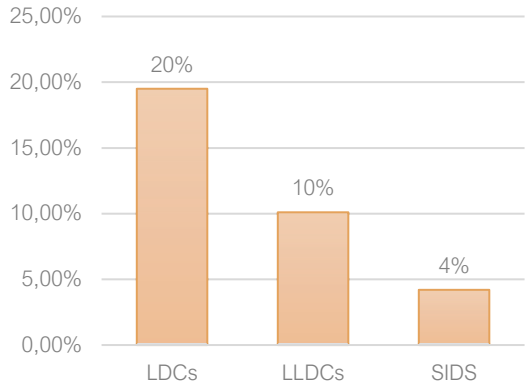
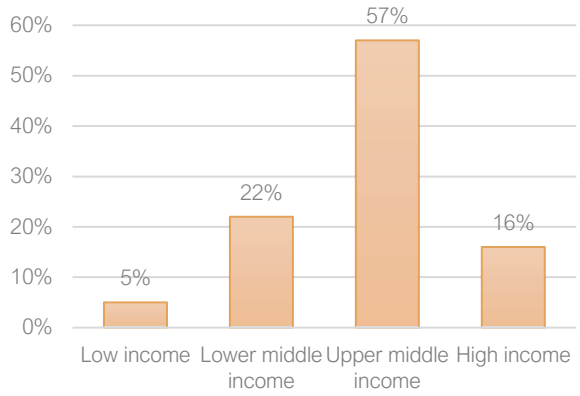


Figure 6: Sample by per capita income level



[6] Within the scope of this study, all respondents having selected the "Yes" option to the question "Is your organization implementing or supporting the implementation of BioTrade Principles and Criteria?" are considered BioTrade-related respondents. As a means to simplify the analysis, respondents having selected any of the other options (i.e. "No", "Do not know", and "Not applicable") have been aggregated as "Non-BioTrade respondents".

[7] The list of countries, classified by development status, is presented in annex 1.

Of the developing countries represented in the sample, 18 are least developed countries (LDCs), 11 are landlocked developing countries (LLDCs), and 9 are small island developing States (SIDS)[8]. In particular, nine of these countries are both LDCs and LLDCs, and two are both LDCs and SIDS. Nearly 20 per cent of survey respondents are based in LDCs, 10 per cent in LLDCs, and 4 per cent in SIDS (figure 5).

Trade experience

International trade plays a significant role for most companies in the sample. 58 per cent of respondents reported having experience in exporting, importing, or both, whereas 35 per cent indicated that they are active only in the domestic market, and 7 per cent did not ascertain whether their organization participates in international trade (figure 7). Moreover, international trade accounts for an important share of total revenues (figure 8). Notably,

Figure 7: Sample by experience with international trade

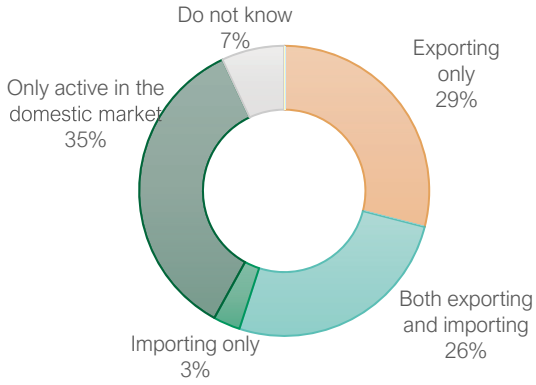
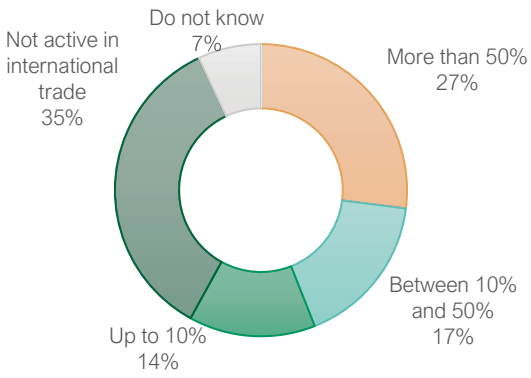


Figure 8: Sample by share of international trade in revenues



27 per cent of the firms are heavily dependent on trade, as they derive more than half of their revenues from international trade. In addition, 17 per cent of the firms in the sample derive between 10 per cent and 50 per cent of their revenues from foreign markets. Another 14 per cent of the firms rely on foreign markets for up to 10 per cent of their revenues.

Geographical distribution

The sample included countries from every region in the globe: 20 from Africa, 17 from the Americas, 15 from Asia, 9 from Europe and 2 from Oceania.[9] In terms of valid responses, the Americas was the most represented region (49 per cent), followed by Africa and Asia (both at 18 per cent) (figure 9). Notably, three subregions accounted for two thirds of the sample: South America (42 per cent), Southeast Asia (12 per cent) and Eastern Africa (12 per cent) (figure 10). In part, this underscores the focus of the Global BioTrade Facilitation Programme on these subregions, including the strong network of BioTrade partners there. Similarly, the most represented regions are also the most biodiversity-rich ones, reflecting why a high number of respondents may be concentrated around them.

[8] LDCs, LLDCs and SIDS confront specific structural challenges to sustainable development and are often highly vulnerable to economic and environmental shocks. In addition, LDCs and LLDCs have low levels of human assets. Low-income countries, defined by the (World Bank Country and Lending Groups – World Bank Data Help Desk, 2021) as economies with a gross national income (GNI) per capita below $1,036 in 2020, account for 5 per cent of the sample (figure 6). By contrast, 79 per cent of the sample stem from lower and upper middle-income countries, with a GNI per capita between $1,036 and $12,535 in 2020. Lower middle-income economies had a GNI per capita between $1,036 and $4,045 in 2020, and upper middle-income economies had a GNI per capita between $4,046 and $12,535 in the same year. Since middle income countries account for 75 per cent of the world's population and 62 per cent of the world's poor (The World Bank in Middle Income Countries - Overview, 2021), the large share of survey responses from these countries is not overly disproportionate.

[9] The list of countries, classified by region, is presented in annex 2.

Figure 9: Sample by region

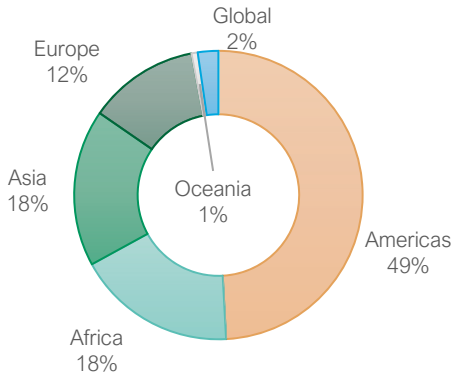
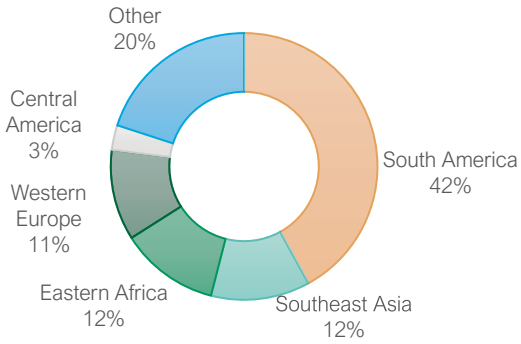
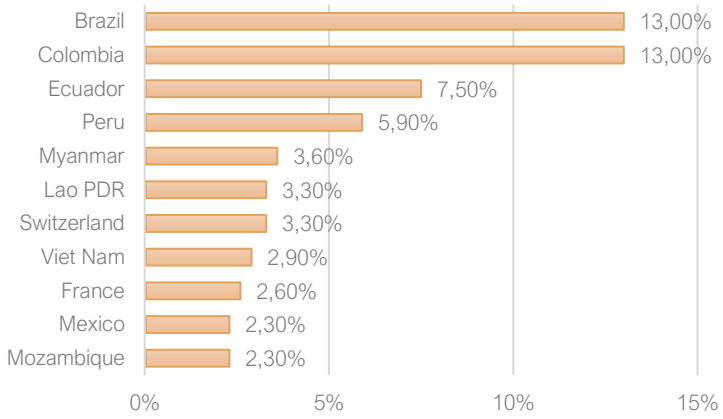


Figure 10: Sample by subregion



Seven of the top 10 countries in the sample were from South America, Southeast Asia and Eastern Africa (see figure 11). The four most represented countries were from South America: Brazil and Colombia, tied in first place (each accounting for 13 per cent of survey responses), followed by Ecuador (7.5 percent) and Peru (6 per cent). Next were three countries from Southeast Asia and two from Western Europe: Myanmar (3.6 per cent), the Lao People's Democratic Republic (3.3 per cent), Switzerland (3.3 per cent), Viet Nam (2.9 per cent) and France (2.6 per cent). Mexico and Mozambique were tied in tenth place, each accounting for 2.3 per cent of the sample.

Figure 11: Ten most represented countries in the sample

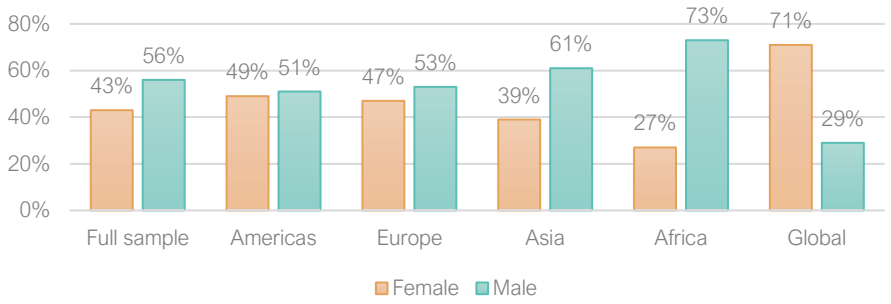


Gender distribution

The survey addressed the gender issue from two perspectives: the gender of the survey respondent and the share of women in the labour force of the respective organization. Women accounted for 43.3 per cent of respondents, and men for 56.3 per cent. The share of female respondents varied significantly across regions, being the lowest in Africa (27 per cent) and highest in the Americas (49 per cent) (figure 12). The gender gap was smaller among respondents from the Americas (1 percentage point) and Europe (3 percentage points), but significantly larger among respondents from Asia (11 percentage points) and Africa (23 percentage points).

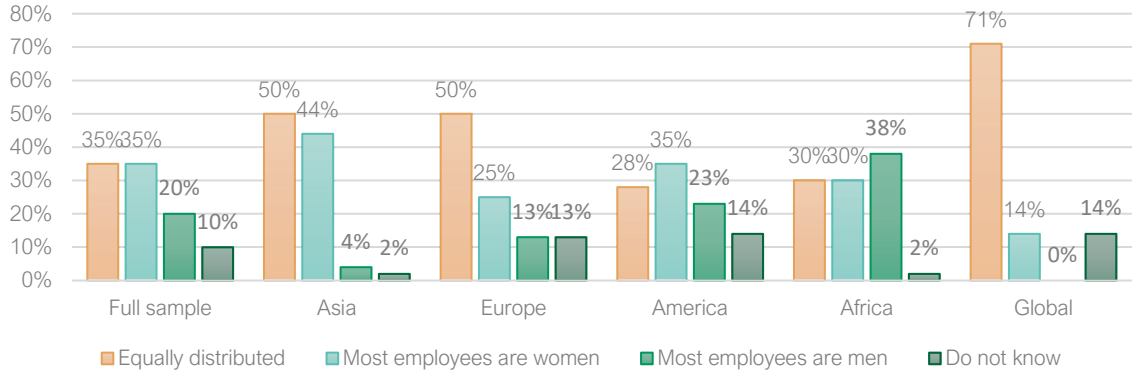
In relation to women in the organization's workforce (figure 13), 35 per cent of participants indicated that most employees in their institution are women, while another 35 per cent reported that their organization's workforce is equally distributed among women and men. 20 per cent declared that most employees are men and 10 per cent of respondents did not know the relative share of women in their organization's workforce.

Figure 12: Sample by gender of respondent



Women are particularly well represented in Asia as nearly all respondents reported that their organization's workforce is either gender balanced (50 per cent) or dominated by women (44 per cent). By contrast, only 4 per cent of sampled organizations in Asia have male-dominated workforces. In the Americas, 35 per cent of respondents indicated that women make up most of the workforce, 28 per cent that the workforce is gender balanced, and 23 per cent that most employees are men. Africa was the region with the highest share of respondents reporting male-dominated workforces (38 per cent). It is also the only region where male-dominated workforces are more prevalent than female-dominated workforces or gender-balanced workforces (30 per cent each).

Figure 13: Sample by share of women in the organization's workforce



Private sector participation

Most private sector organizations in the sample were micro, small and medium enterprises (MSMEs), which reflects the prevalence of such businesses in developing countries and the priorities of the Global BioTrade Facilitation Programme. Nearly half of the businesses in the sample were micro enterprises, with less than 10 employees (figure 14). In addition, 26 per cent of the firms were small enterprises, with between, with between 11 and 50 employees, and 13 per cent were medium-sized enterprises, with between 51 and 200 employees. Only 5 per cent of the sampled businesses had a staff count greater than 200 employees. Another 7 per cent of private sector respondents were unable to determine the size of their organization's workforce. As a result, MSMEs accounted for at least 88 per cent of businesses in the sample, which is commensurate to their global prevalence.[10]

[10] MSMEs represent about 90 per cent of businesses and more than 50 per cent of employment worldwide (World Bank, 2017)

Private sector respondents stemmed from a wide variety of economic sectors (figure 15). Food and beverage was by far the most reported sector (54 per cent), followed by nature-based tourism (22 per cent), personal care and cosmetics (19 per cent), forestry and forestry products, such as products made of wood and pulp, (18 per cent), and handicrafts (17 per cent). The sum across sectors does not equal to 100 per cent because nearly half of the respondents (48 per cent) are active in two or more sectors. On average, the sample's private sector institutions are active in two sectors. Food and beverage was invariably the most reported sector in every region. However, the second most reported sector varied by region, in part reflecting regional comparative advantages: forestry and forestry products in Africa; nature-based tourism in the Americas; flavours, fragrances and colours in Asia; and personal care and cosmetics in Europe.[11]

Figure 14: Sample by number of full-time employees

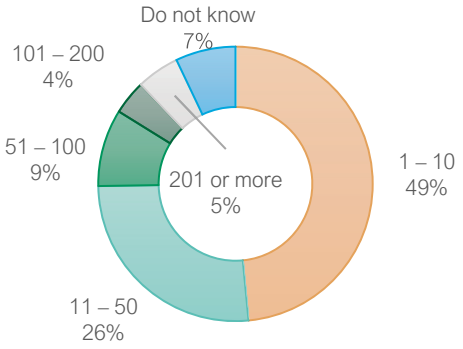
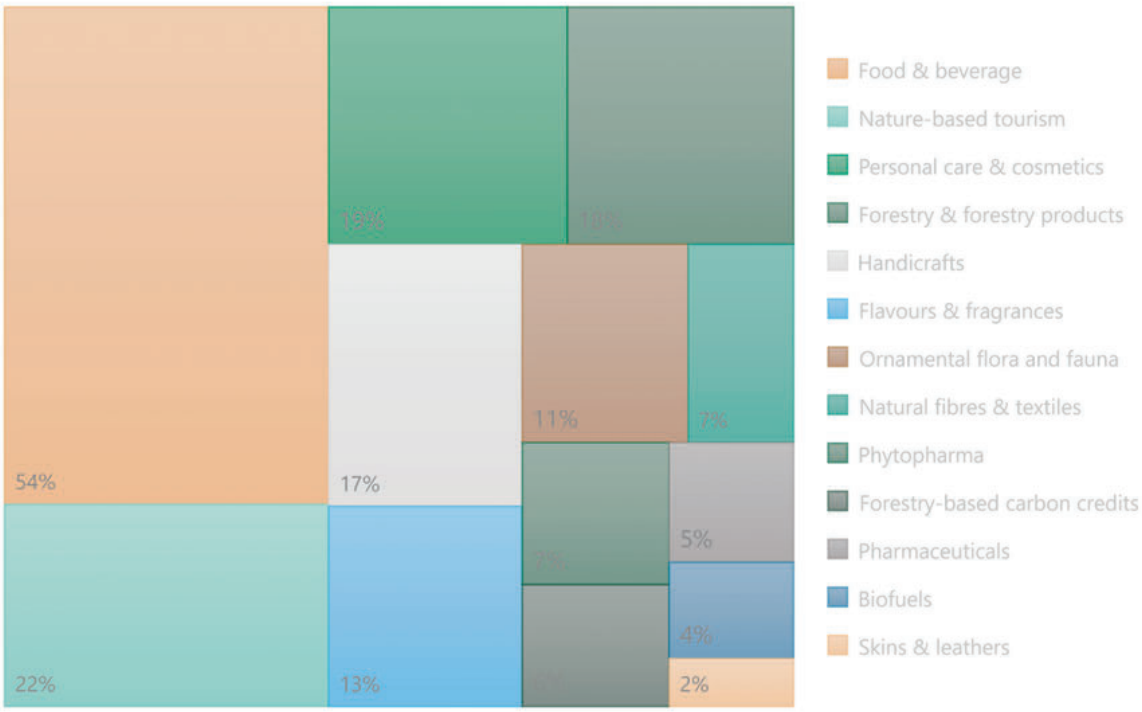


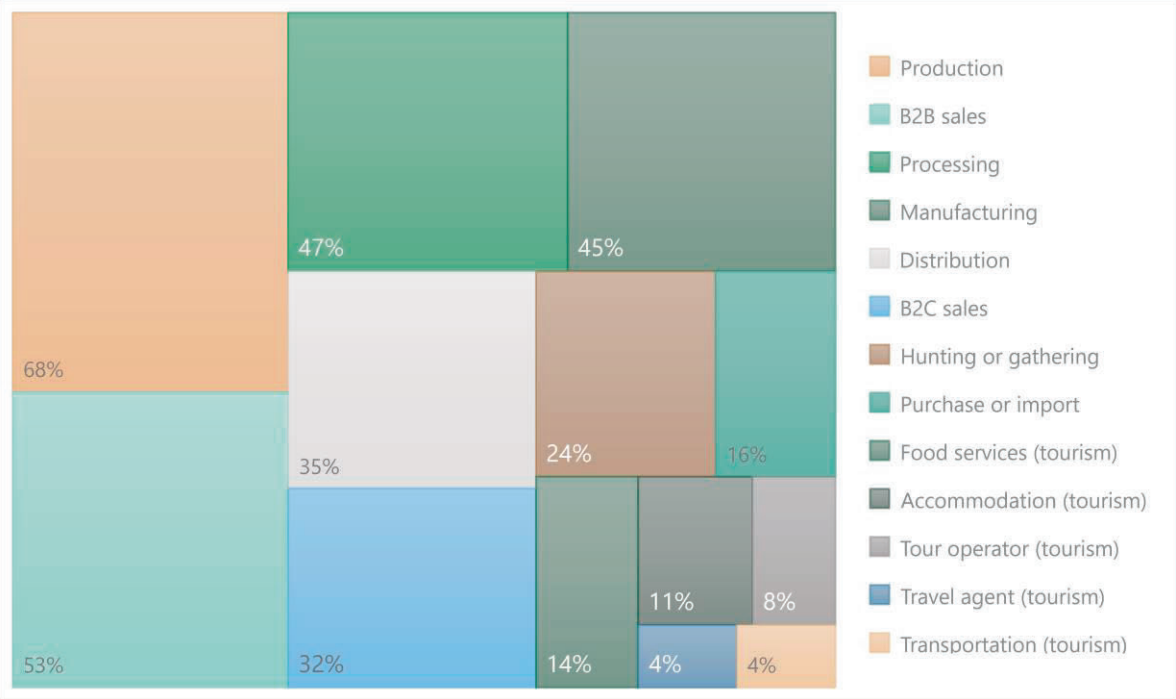
Figure 15: Sample by sector of activity



Private sector respondents were also involved in multiple stages along value chains (figure 16). On average, they participate in four stages. The most reported stages are production (68 per cent), business-to-business (B2B) sales and exports (53 per cent), processing (47 per cent), manufacturing (45 per cent) and distribution (35 per cent).

[11] The survey did not contain private sector respondents from Oceania.

Figure 16: Sample by stage along the value chain

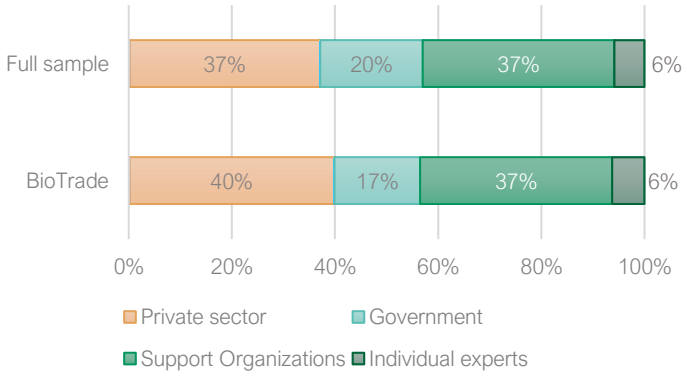


BioTrade-related respondents' participation

The great majority of respondents in the sample were BioTrade-related respondents. As seen in figure 3, 73 per cent of the sample responded affirmatively to the question whether their organization is implementing or supporting the implementation of the BioTrade P&C. BioTrade-related respondents remain a significant majority also when looking at the different institutional categories separately.

Given that the majority of respondents are active in BioTrade, the distribution of respondents from the different sectors among BioTrade-related respondents almost matches the distribution of respondents across the whole sample (figure 17). In fact, the percentage of respondents from support organizations and individual experts exactly matches the percentage they represent in the whole sample. For the private sector, this figure is slightly higher than the sample average whereas for the government sector it is lower.

Figure 17: Sectorial composition of BioTrade-related respondents



The prevalence of BioTrade-related respondents was relatively homogeneous across the different institutional groups (figure 18). They are represented at or above average for all institutional groups except for government representatives, of which BioTrade-related respondents represented "only" 61 per cent. The geographical distribution of BioTrade-related respondents (figure 19) shows that half were from the American continent, 19 per cent from Asia and 18 per cent from Africa. One out of every ten respondents was based in Europe and 3 per cent were from international organizations, and were therefore not tied to any geographical area. One BioTrade respondent participated to the survey from Oceania, representing 0.4 per cent of all BioTrade-related respondents.

Figure 18: BioTrade-related respondents – Institutional groups

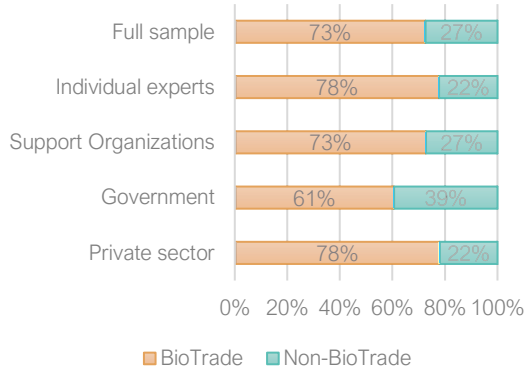
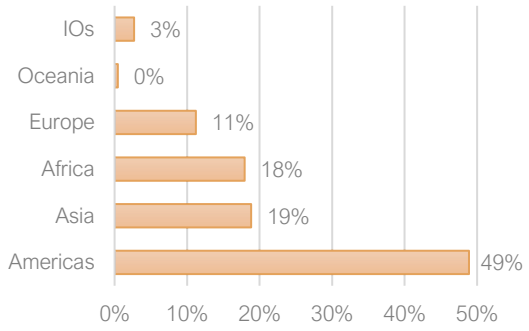
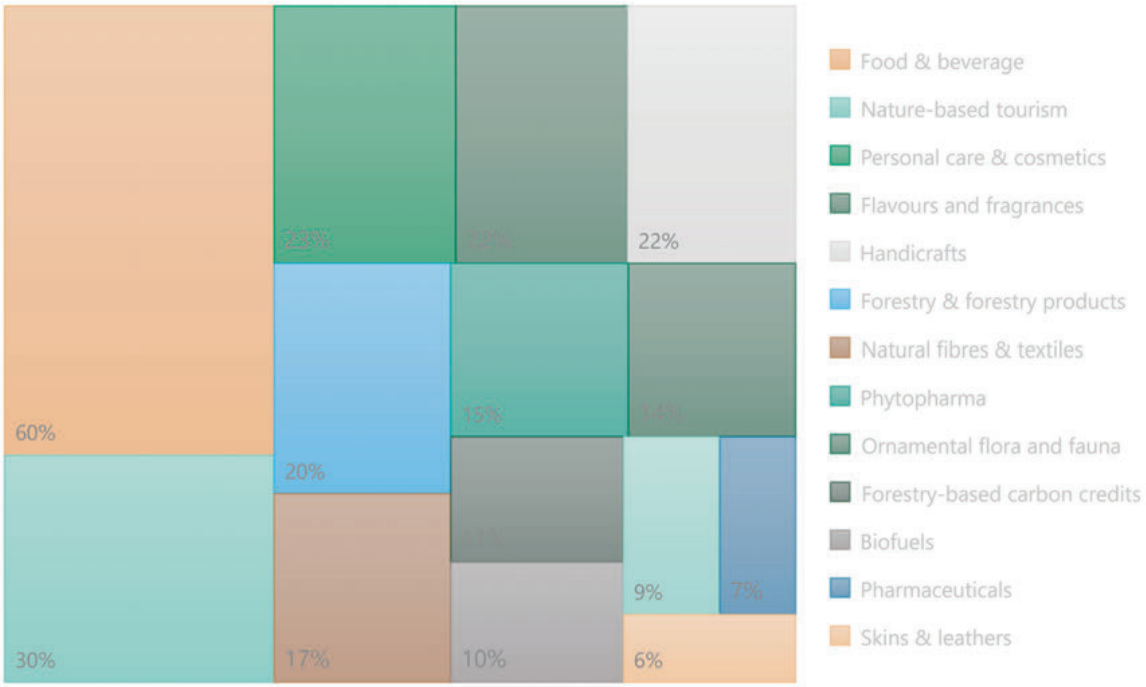


Figure 19: BioTrade-related respondents – Geographic distribution



BioTrade-related respondents were also active in several different sectors, the most common being the food and beverages sector, with 60 per cent of respondents citing it as one of their sectors of activity (figure 20).[12] Due to the majority of respondents to the survey identifying as BioTrade-related respondents, their distribution across activity sectors is very similar to that of the whole sample. In fact, not unlike in figure 15, the most prominent sectors after food and beverages were nature-based tourism (30 per cent) and personal care and

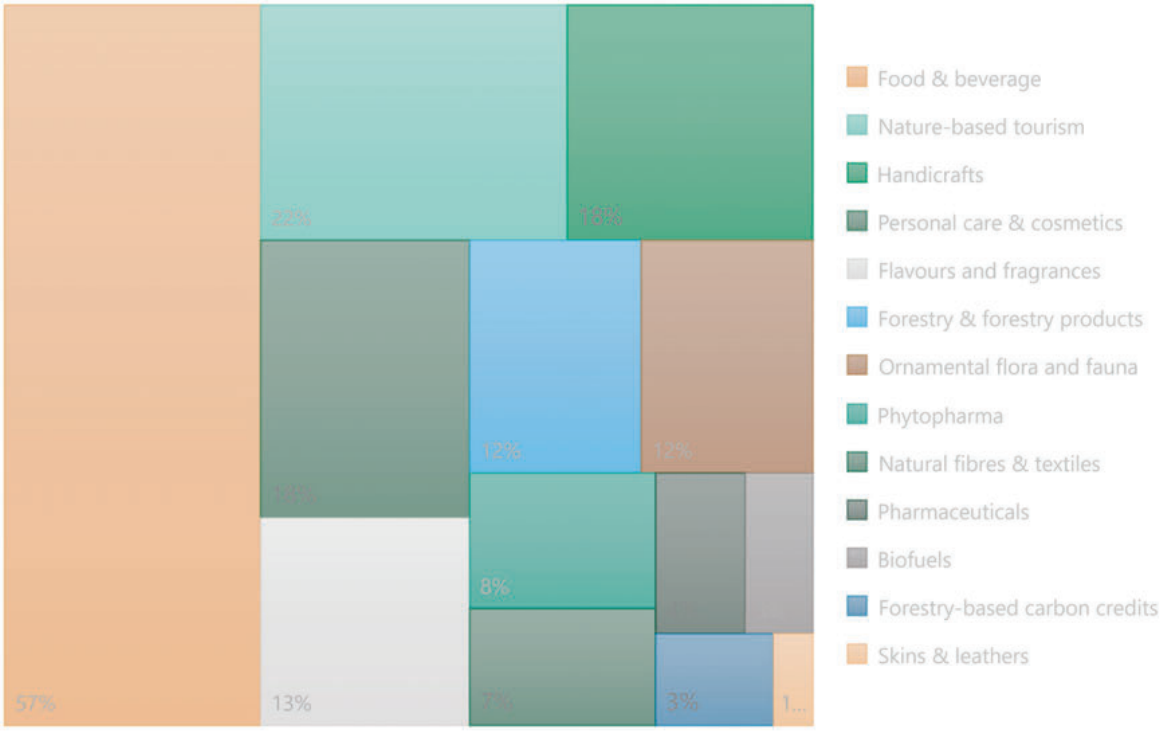
Figure 20: BioTrade-related respondents by sector of activity – Full sample



cosmetics (23 per cent). After these, the magnitude order varied somewhat but remained overall similar. For BioTrade-related respondents, other significant sectors were flavours and fragrances, handicrafts (both 22 per cent), and forestry and forestry products, including products made of wood and pulp, (20 per cent). The remaining sectors were selected by less than one in five BioTrade-related respondents.

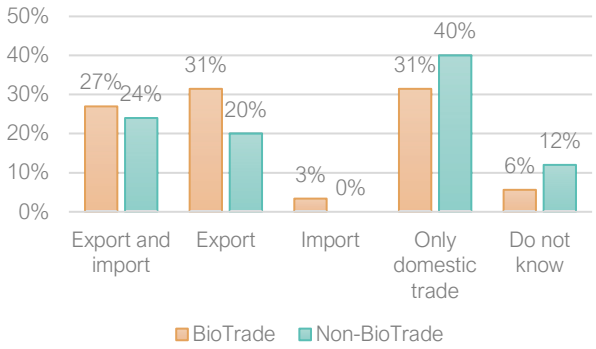
[12] Please note that the question being framed as a multiple-choice question, the percentages add up to more than 100 per cent

Figure 21 – BioTrade-related respondents by sector of activity – Private sector



Looking at the sectors of activity of private sector respondents identifying as BioTrade-related respondents, the distribution remains quite similar. Food and beverages was still by far the sector selected by most respondents, with 57 per cent of respondents stating they are active in this sector. The following sectors have been selected by a smaller share of respondents than for the full sample, perhaps indicating a tendency among private sector respondents to select fewer responses than for the overall sample. The distribution of responses among BioTrade-related respondents from the private sector is illustrated in figure 21.

Figure 22: BioTrade-related respondents' trade engagement – Private sector



Trading and commercialization are the central part of any economic activity, and more so for BioTrade-related respondents, who implement or support the implementation of sustainability guidelines centred around these activities. Figure 22 illustrates the type of trade in which respondents from the private sector engage. Similar to the overall sample, BioTrade-related respondents more or less in equal parts reported engaging in both exporting and importing, exporting only, or domestic trade only (27, 31 and 31 per cent respectively), while only 3 per cent stated importing only. These figures are somewhat more varied for non-BioTrade respondents: four out of ten reported engaging in domestic trade only, significantly more than those engaging in international trade, be it by exporting only (20 per cent) or by both exporting and importing (24 per cent). None of the non-BioTrade respondents stated engaging in imports only.

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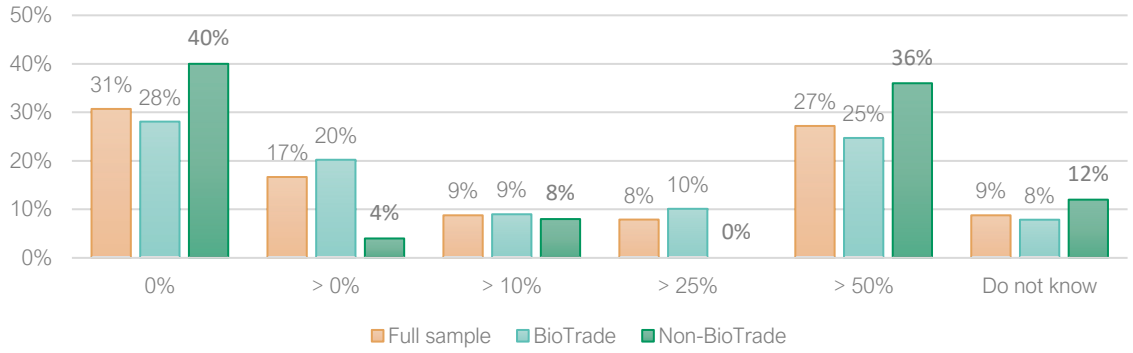
Figure 23: BioTrade-related respondents' revenue from international trade – Private sector



the overall sample, BioTrade-related respondents more or less in equal parts reported engaging in both exporting and importing, exporting only, or domestic trade only (27, 31 and 31 per cent respectively), while only 3 per cent stated importing only. These figures are somewhat more varied for non-BioTrade respondents: four out of ten reported engaging in domestic trade only, significantly more than those engaging in international trade, be it by exporting only (20 per cent) or by both exporting and importing (24 per cent). None of the non-BioTrade respondents stated engaging in imports only.

Figure 24: BioTrade-related respondents' gender representation

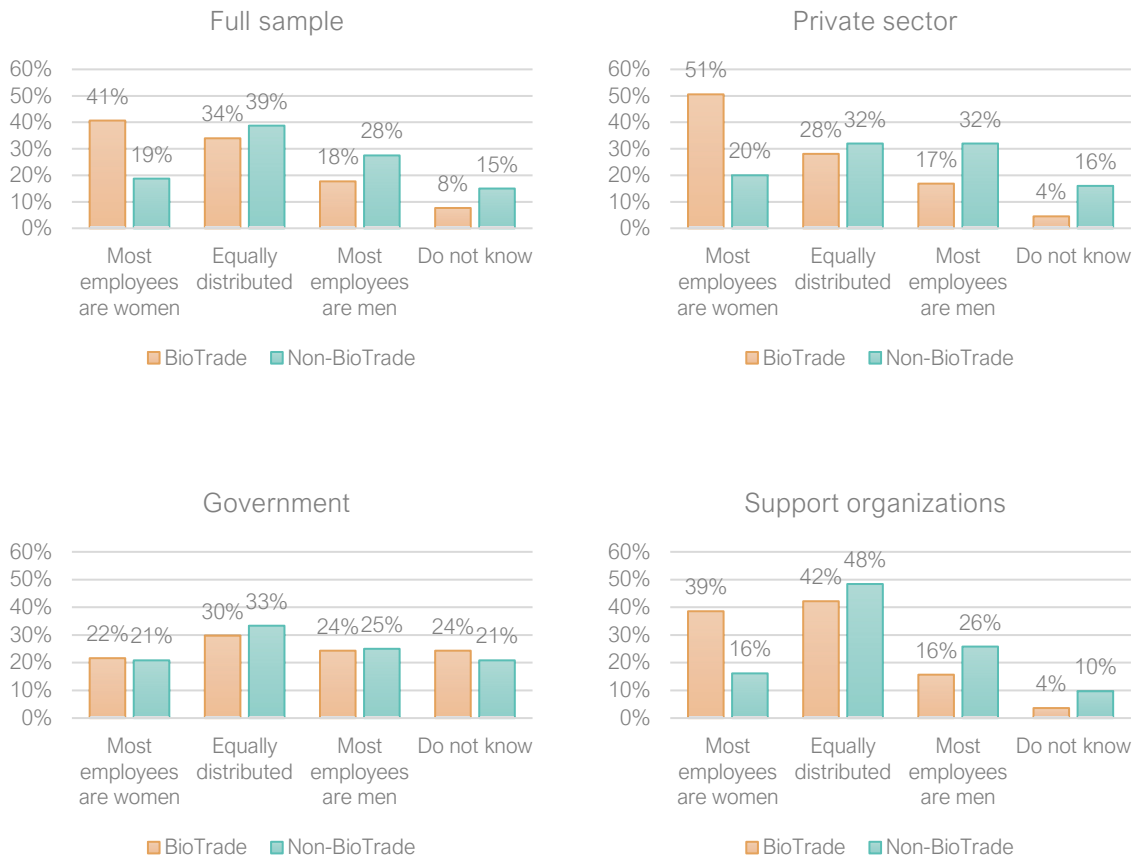


Figure 23 illustrates what share of the revenue of respondents stems from international trade. Interestingly, while not constant, the distribution is more homogeneous for BioTrade-related respondents with respect to non-

BioTrade respondents, for which responses are more heavily centred around zero and more than 50 per cent. In fact, over three quarters of non-BioTrade respondents chose one of these two options while for BioTrade this figure is closer to half. 20 per cent of BioTrade-related respondents reported that between zero and 10 per cent of their revenue stems from international trade against only 4 per cent for non-BioTrade, and 10 per cent BioTrade versus none non-BioTrade state that between a quarter and half of their revenue comes from international trade. These figures seem to suggest that, while non-BioTrade respondents' companies seem to either not or predominantly engage in international trade, BioTrade-related respondents tend to have more diversified sources of income.

Regarding the gender representation among BioTrade-related respondents, it is interesting to notice that there is a much higher discrepancy between BioTrade and non-BioTrade respondents in the private sector and support organizations than there is among government representatives (figure 24). In fact, over half of BioTrade-related respondents from the private sector stated that there are more women employed in their company than men, against one in five non-BioTrade ones. On the other hand, companies led predominantly by men are eschewed towards non-BioTrade respondents. A similar contrast, albeit not as stark, can be observed among support organizations while in the public sector figures are more closely aligned. Interestingly, for support organizations the share of respondents that stated that there is an equal distribution of men and women is noticeably higher than for the other two institutional groups – well over 40 per cent against roughly 30 per cent respectively.

SECTION II: KEY FINDINGS AND ANALYSIS

3. Opportunities seized by survey respondents

The COVID-19 pandemic generated certain opportunities for actors involved in the value chains of biodiversity-based products and services. 17 per cent of respondents reported being positively affected by the pandemic between March and December 2020, relative to the same period in the previous year (figure 25). The corresponding share is higher in the private sector (19 per cent) and among individual experts (22 per cent), but lower in the public sector (16 per cent) and among support organizations (14 per cent).

Of the participants experiencing an overall positive impact from the pandemic, 65 per cent reported that this impact was sustained over time and 29 per cent that it was temporary, whereas 6 per cent did not provide an assessment of the impact's duration (figure 26). Results for the private and public sectors nearly mimic the average for the full sample. However, the share of respondents reporting a sustained positive impact from the pandemic is lower among support organizations (56 per cent) and higher among individual experts (75 per cent).

Figure 25: Share of respondents reporting an overall positive impact from the COVID-19 pandemic – Full sample

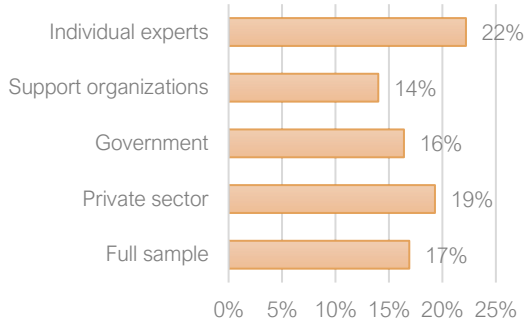
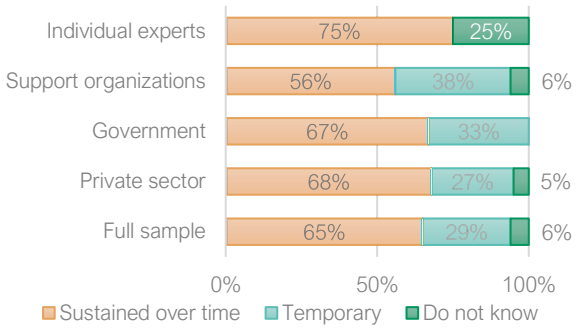
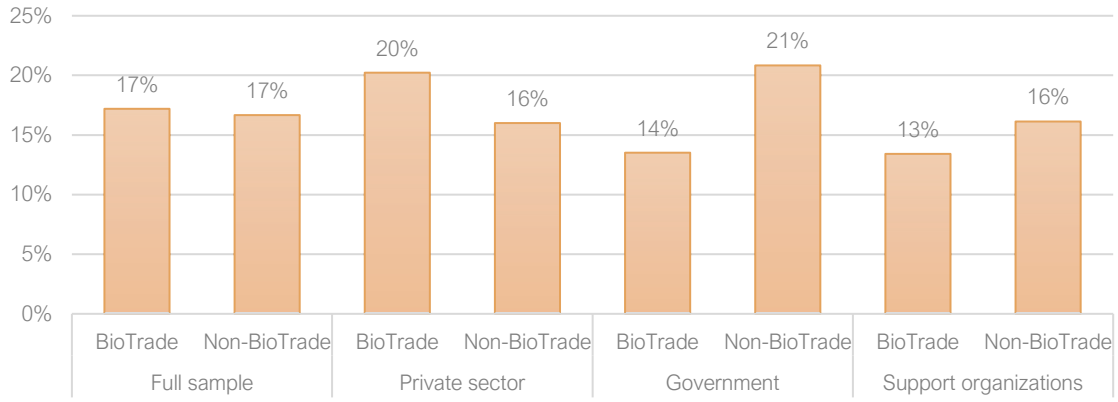


Figure 26: Duration of the positive impact from the COVID-19 pandemic – Full sample



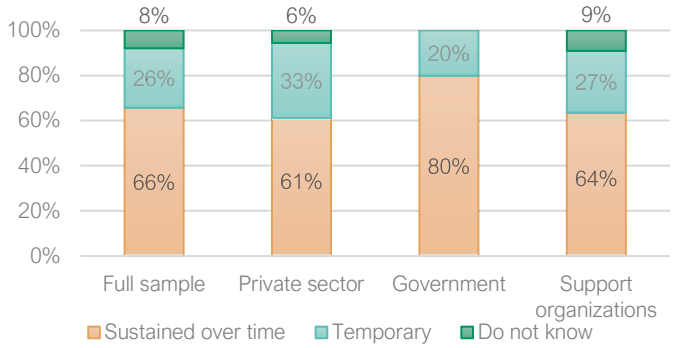
Disaggregating the responses into BioTrade-related respondents and those who do not implement or support the implementation of the BioTrade P&C, it is noticeable how positive impacts from the COVID-19 pandemic were reported by a higher share of BioTrade-related respondents from the private sector, compared to non-BioTrade ones (figure 27). Nevertheless, this trend is inverted for the other institutional groupings, in particular for respondents from the government sector, where positive impacts were reported by one and a half times more non-BioTrade respondents compared to BioTrade ones.

Figure 27: Share of respondents reporting an overall positive impact from the COVID-19 pandemic – BioTrade-related respondents



Of the BioTrade-related respondents reporting an overall positive impact from the pandemic, respondents of the government were by far the most to report lasting improvements, with four out of five stating impacts were sustained over time (figure 28). For private sector and support organizations' respondents these figures were closer to the global average, at 61 and 64 per cent respectively.

Figure 28: Duration of the positive impact from the COVID-19 pandemic – BioTrade-related respondents



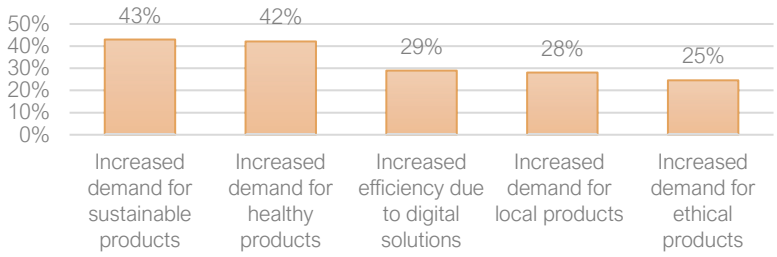
Note: Non-BioTrade respondents were not included due to the number reporting positive impacts being too small to provide a meaningful statistic.

a) Business opportunities

17 per cent of sampled private sector organizations report that the COVID-19 pandemic increased their access to new business opportunities, including by diversifying into new local or export markets, new sectors, and new products. Nonetheless, results vary significantly across regions. In the Americas, 27 per cent of surveyed companies have seen their business opportunities increase in response to the pandemic. Elsewhere, the share is significant lower: 13 per cent in Asia, 9 per cent in Africa, and 8 per cent in Europe. In addition, 15 per cent of sampled private sector organizations report that sales increased as a result of the COVID-19 pandemic. The divergence between regional results is less pronounced in this case, varying from 18 per cent in Africa, 16 per cent in the Americas, 13 per cent in Asia, and 8 per cent in Europe. Notably, the share of companies experiencing increases in sales is substantially lower than the share of companies experiencing decreased sales (58 per cent), as reported in figure 40.

The uncertainty around the COVID-19 pandemic and its health and economic impacts are likely to have encouraged consumers to review their consumption priorities. In fact, over the full sample nearly 70 per cent of respondents from the private sector reported an increase in demand for products and services perceived as sustainable, healthy, ethical, local, or a combination of two or more of these qualities. In particular, more than 40 per cent of respondents report increased demand for products and services perceived as sustainable or healthy, while over a quarter of respondents indicate a boost in demand for products perceived as ethical or local (figure 29).

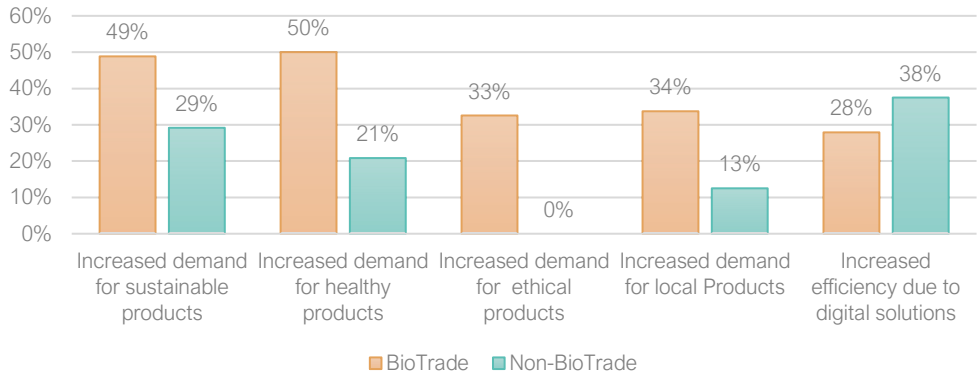
Figure 29: Economic opportunities arising from the COVID-19 pandemic – Full sample



Additional economic opportunity stemming from the COVID-19 pandemic was an increased efficiency due to the adoption or upgrading of digital solutions reported by 29 per cent of respondents. Strikingly, none of these from the African region. The figure of respondents from the Americas, Asia and Europe is higher than the global average, at 31, 44 and 50 per cent respectively.

From a regional perspective, this trend is confirmed to a certain extent. A higher share of respondents from Asia report an increase in demand for products and services perceived as sustainable, healthy, ethical or local. Slight outliers are African respondents, who report increased demand for local and sustainable products of the same magnitude (41 per cent), and respondents from Europe, half of which reported an increase in demand for products perceived as sustainable or ethical (50 per cent) compared to those perceived as healthy or local (42 and 33 per cent respectively).

Figure 30: Economic opportunities arising from the COVID-19 pandemic – BioTrade-related respondents



As one could perhaps expect, BioTrade-related respondents have seen an increase in demand for products and services perceived as sustainable, healthy, ethical, and local in significantly larger numbers than their non-BioTrade counterparts (figure 30. See also the case illustrated in Box 1.). This gap is smallest for increases in the demand for sustainable products (49 versus 29 per cent); for healthy products it is more than double, for local products nearly triple, while for ethical products one third of BioTrade-related respondents reported an increase in demand against none of non-BioTrade respondents. The only opportunity arising from the pandemic stated by more non-BioTrade respondents are gains brought by switching to digital solutions.

Box 1: Positive impacts of the COVID-19 pandemic: The case of Salay Shae Saung jujube producers in Myanmar

Jujube is a fruit cultivated from a thorny tree from the genus *Zizyphus* in Myanmar. The jujube fruit has long been an important part of Burmese tradition and culture, grown mainly in the Mandalay, Sagaing and Magwe regions. In addition to traditional jujube products such as toffee and jaggery, western-style processed products are also becoming popular such as jams, syrups, and juice.

Salay Shae Saung is a small business in the Magway region that produces health supplements, including jujube products. Before the pandemic, the company implemented measures and guidelines based on the BioTrade Principles and Criteria (P&C), including traceability and documentation requirements for factories and farmers. Having these in place allowed the company to quickly implement government measures at the outbreak of the pandemic in March 2020. Due to having safety protocols and measures already in place, the company was able to keep its business open and to keep their workers employed throughout the pandemic. Training employees and informing suppliers of new practices and rules ensured better preparedness for hygiene and safety measures, thus guaranteeing the wellbeing of workers. As a result, business continued undisrupted and the livelihoods of all workers were protected.

In addition, as a result of the pandemic, demand for the company's products has increased due to rising popularity of immunity-boosting health foods. In 2020, the turnover for the company was maintained at 171 per cent compared to 2019. In the first half of 2021, the revenue of the company reached 65 per cent of the total profit obtained in 2019. At Salay Shae Saung 90 per cent of employees are women and all have continued

to work during the pandemic. Through sustainably cultivating the jujube fruit, the company is helping to preserve essential ecosystem functions because the jujube tree has important soil improvement and water retention properties.

Source: (UNCTAD, 2020d)

b) Sustainability opportunities

The global health crisis and economic downturn engendered by the COVID-19 pandemic encouraged many organizations to reassess their sustainability strategies and practices. Among the 114 private sector organizations in the sample, 38 per cent enhanced sustainability efforts in response to the COVID-19 pandemic (figure 31). Of these, 13 per cent enhanced efforts both in-house and within their supply chains. Another 20 per cent enhanced efforts in-house only, and 4 per cent enhanced efforts only within their supply chains (figure 32). Several participants enhanced or increased their investment in the promotion and communication related to their sustainable actions, socio-environmental impact, and the characteristics of their products or services. For instance, companies are developing, adapting and/or promoting their offer of high quality, healthy, natural, ethical products, and particularly those supporting the immune system.

Figure 31: Change in organization's sustainability efforts in response to the COVID-19 pandemic – Private sector

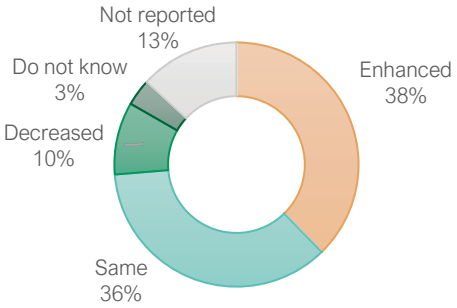
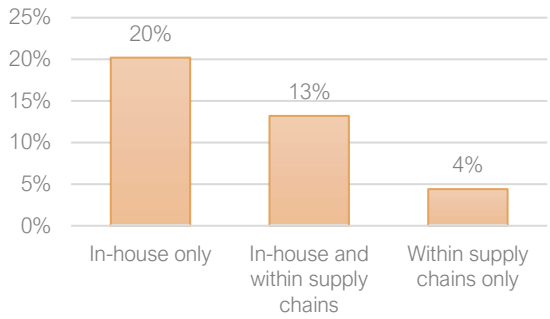


Figure 32: Enhanced sustainability efforts in response to the COVID-19 pandemic – Private sector



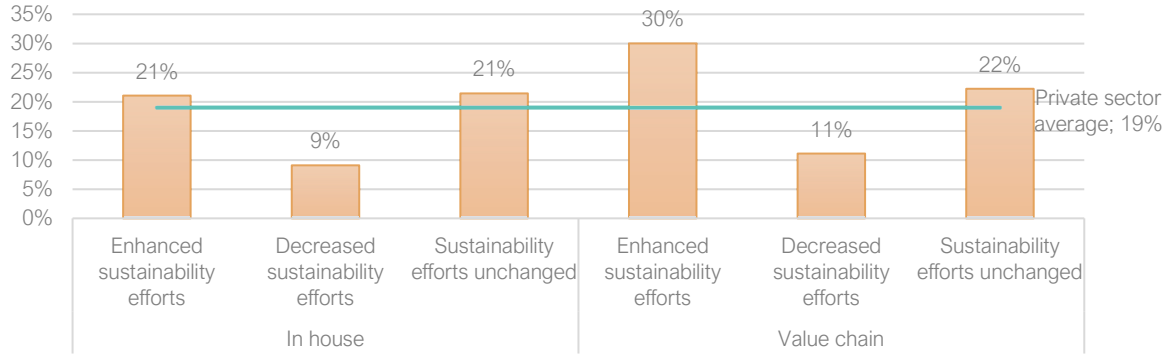
An interesting aspect to emerge from the survey responses is the seemingly positive correlation that appears to exist between respondents' organizations' enhanced sustainability efforts and positive impacts from the pandemic. While this does not allow to establish a direct causal relation between these two variables, it is nonetheless a first step towards a more comprehensive understanding of the dynamics at play.

To do so, it was analyzed which of the implemented measures presented the highest share of respondents having reported a positive impact from the COVID-19 pandemic. This does not relate to the absolute number of respondents but rather to the proportion of respondents having selected a specific option that also reported positive impacts from the pandemic.[13] Figure 33 shows all the measures for which this proportion was higher than the private sector average of 19 per cent.

It is immediately apparent that respondents who reported having decreased their sustainability efforts also reported positive impacts from the pandemic to a much lower extent than the global average, as well as than their counterparts who enhanced their sustainability efforts or at least left them unchanged. The latter, on the other hand, both reported positive impacts to a higher extent than the global average, both in-house as within supply chains.

[13] Options selected by a very small number of respondents were excluded from the figure as they do not provide a meaningful statistical analysis.

Figure 33: Correlation between sustainability efforts and reported positive impacts from the COVID-19 pandemic



As mentioned, these figures are not enough to establish a certain causal effect between these two variables. However, the consistency of the correlation, as well as the order of magnitude of the difference between decreasing sustainability efforts or not, seems to suggest focusing on sustainability measures within one's organization could have played a role in avoiding the most negative impacts of the pandemic.

c) Other opportunities

The pandemic has also enabled actors to conduct research (market research), develop business plans for new business opportunities, establish new distribution channels such as contact-free distribution options and digital marketing. Additionally, other actors focused on institutional strengthening and in stablishing new strategic partnerships, including accessing to grants or loans for sustainable businesses.

Box 2: Switching to the digital space: the case of PromPerú

PromPerú is the Peruvian business support organization that contributes to the economic development of the country through the promotion of its tourism sector and value-added export products. Due to the advent of the COVID-19 pandemic and the movement restrictions it entailed, Peruvian businesses were faced with the need to switch their networking and trading activities, such as marketplaces, trade shows and business meetings, to the digital space.

In order to support businesses in this transition, PromPerú created several virtual tools to facilitate trade, collaborations and interactions between them. For instance, the development of a digital promotion kit for companies that included guidelines to achieve a comprehensive and active online presence, as well as the creation of PERÚNATURA, a trade fair moved online and transformed into a virtual meeting platform for businesses to meet and share information and data. These instruments are improved continuously based on user feedback, allowing them to become part of the most useful tools for companies to keep business interactions between peers and potential buyers during the pandemic.

The digital promotion toolkit as well as the PERÚNATURA platform allowed businesses to have a visible presence online. For instance, at the 2021 trade fairs of e-BIOFACH and Natural Products Expo Virtual, Peruvian companies promoted their products and interacted trade fair participants (e.g., potential buyers, investors and peers) through online profiles created for the event. These profiles included elements such as multimedia, videos, presentations, images, weblinks, contact details, etc. This facilitated businesses to continue their activities during the COVID-19 pandemic.

Source: Presentation held by Marco Antonio Vilches Nieto, PromPerú, at the 4th BioTrade Stakeholders Steering Committee meeting on 26 May 2021.

Another interesting boost was seen in the digital transformation of activities by conducting virtual trainings and meetings, teleworking, e-commerce (developing or strengthening online stores), implementing e-payment systems, improving companies' website, and use of social media (Instagram and WhatsApp), as illustrated by

the example of PromPerú in box 2. For example, companies have been using virtual meetings for business-to-business activities and conducting webinars to communicate to potential clients the benefits of their sustainable business model or products.

4. Challenges faced by survey respondents

The COVID-19 pandemic created challenges for the collection, production, processing, distribution, commercialization, certification, as well as activities related to business support and research (e.g., study of biodiversity-based products and services).

Three quarters of surveyed organizations and individuals report that the health crisis and concomitant economic downturn had a negative impact on their operations between March and December of 2020, relative to the same period in the previous year (figure 34). Results for the private sector and support organizations nearly mimic the average for the full sample. However, they are above average in the public sector (79 per cent) and below average among individual experts (67 per cent).

Among the respondents negatively impacted by the COVID-19 pandemic, 53 per cent report that this impact was sustained over time, 43 per cent that it was temporary, and 3 per cent did not provide an assessment of the duration of the impact (figure 35). Results for the private sector are close to the full sample average. Nonetheless, the share of respondents reporting a sustained effect is lower in the public sector (48 per cent) and higher among support organizations (56 per cent) and individual experts (58 per cent).

Figure 34: Share of respondents reporting an overall negative impact from the COVID-19 pandemic – Full sample

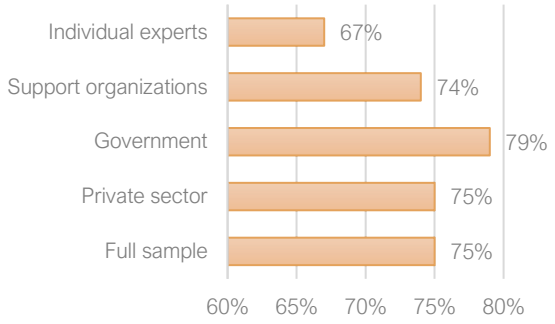
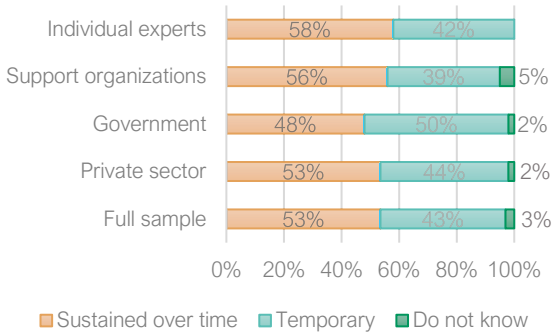


Figure 35: Duration of the negative impact from the COVID-19 pandemic – Full sample

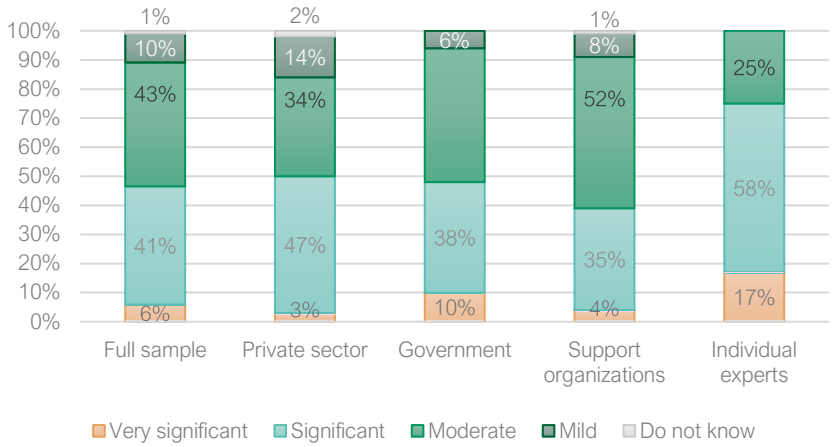


Respondents rated the pandemic's negative impact on a four-step scale of increasing intensity, from "mild" to "moderate", "significant (leading to serious difficulties)" and "very significant (leading to the close of business or bankruptcy)". The combined share of "significant" and "very significant" responses stood at 47 per cent for the full sample, 48 per cent for the government, and 50 per cent for the private sector (figure 36). By comparison, the share of respondents that were significantly or very significantly affected by the pandemic was lower among support organizations (38 per cent) but much higher among individual experts (75 per cent). "Moderate" was the single most reported response for the full sample (43 per cent), the government (46 per cent) and support organizations (52 per cent). In contrast, "very significant" was the most reported response in the private sector (47 per cent) and among individual experts (58 per cent).

While the effect of the pandemic was overwhelmingly negative in all regions, the share of respondents reporting a negative impact is higher in Africa (84 per cent) and lower in Asia (69 per cent), Europe (71 per cent) and the Americas (74 per cent).[14] The duration of the impact also varied across regions: the share of respondents reporting that the impact was sustained over time is above average in Africa (61 per cent), Europe (56 per cent) and the Americas (55 per cent), but significantly below average in Asia (35 per cent).

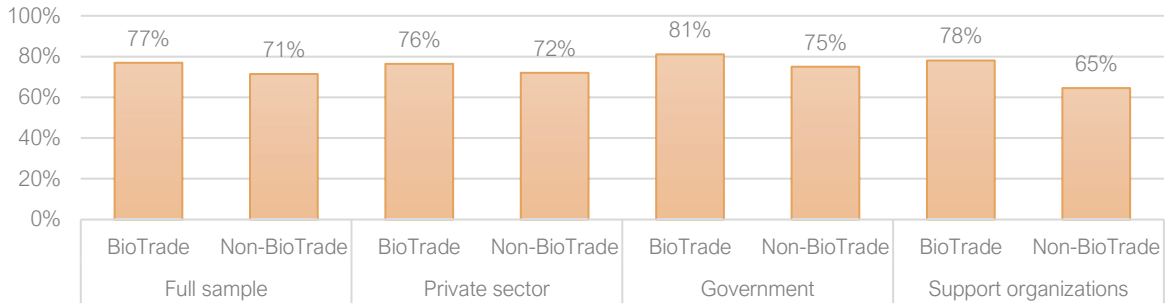
[14] The small number of observations from Oceania prevents the observation of patterns or the analysis of trends.

Figure 36: Extent of the negative impact from the COVID-19 pandemic – Full sample



These figures remain relatively constant when disaggregating between BioTrade-related respondents and non. In fact, between 65 and 81 per cent of respondents from all institutional groups, whether or not implementing the BioTrade P&C, reported having perceived a negative impact from the pandemic (figure 37). These figures are broadly in line with the global average of 77 and 71 per cent of BioTrade and non-BioTrade respondents respectively. Interestingly, for all the institutional groups a higher number of BioTrade-related respondents report having suffered adverse impacts from the COVID-19 pandemic compared to non-BioTrade respondents. While for the private sector and the government this gap remains relatively small – four and six percentage points respectively – for support organizations this difference is of over 10 per cent.

Figure 37: Share of respondents reporting an overall negative impact from the COVID-19 pandemic – BioTrade-related respondents



The duration of the impact for those respondents having reported an adverse effect of the COVID-19 pandemic present some differences between BioTrade and non-BioTrade respondents (figure 38). A higher percentage of non-BioTrade respondents from the private sector and support organization reported having perceived an adverse impact that was sustained over time, compared to BioTrade-related respondents. This trend is however reversed among government sector respondents. Notably, the prevalence of sustained effects is higher among respondents reporting an overall positive impact (65 per cent – figure 26) than among those experiencing an overall negative impact (53 per cent).

Across all institutional groups, BioTrade-related respondents report having perceived the negative impact of the pandemic to a more significant extent (figure 39). This is particularly true for the private and public sector, where respectively 54 and 50 per cent of BioTrade-related respondents reported either a significant or very significant impact, against 33 and 44 per cent of non-BioTrade respondents. Support organizations reported less intense impacts overall, in particular among those not implementing BioTrade, of which only one quarter reported significant impacts, and none reported very significant ones.

The following sections examine the challenges that the COVID-19 pandemic has generated for organizations working with biodiversity-based products and services in the private sector, the government and support organizations.

Figure 38: Duration of the negative impact from the COVID-19 pandemic – BioTrade-related respondents

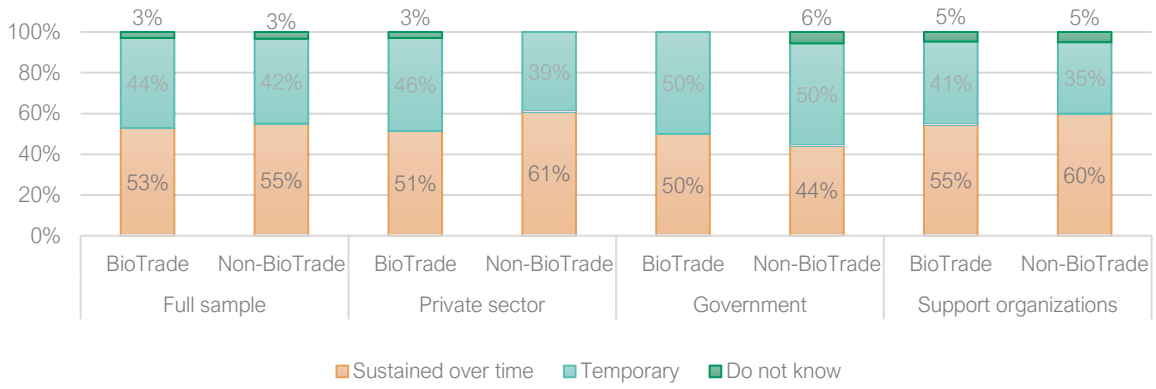
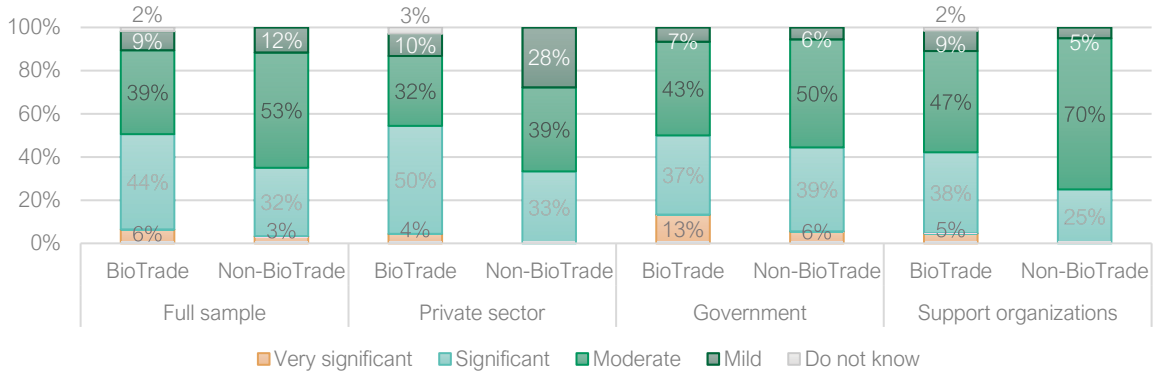


Figure 39: Extent of the negative impact from the COVID-19 pandemic – BioTrade-related respondents

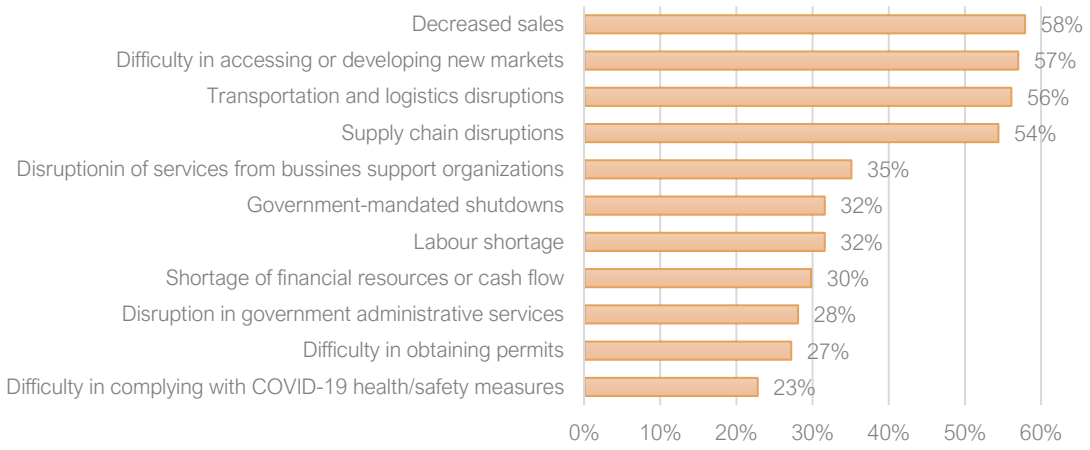


Private Sector

The four COVID-19-related challenges most reported by private sector organizations are the decrease in sales, the difficulty in accessing or developing new markets, the disruption of transportation and logistics services, and the disruption of supply chains. These challenges affected more than half of all private sector organizations in the sample (figure 40).

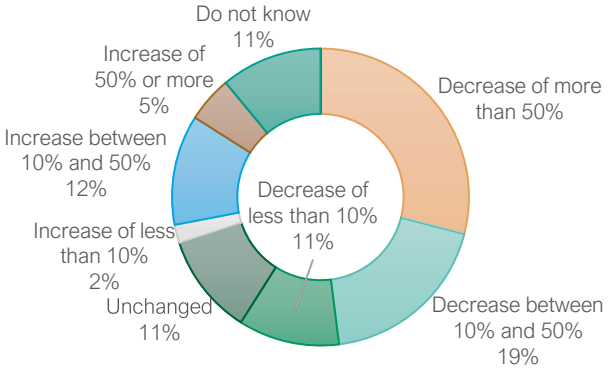
In addition, nearly one third of surveyed private sector organizations were affected by the disruption of services provided by business support organizations, government-mandated shutdowns, and labour shortages (for example, due to lockdowns, illness, or care of family members). Other key challenges faced by the private sector in the context of the pandemic include the shortage of financial resources, the disruption of governmental administrative services, and the difficulty in obtaining permits, all of which were reported by at least one quarter of the organizations in the sample. Finally, 23 per cent of private sector respondents reported facing difficulties in complying with COVID-19 health and safety measures.

Figure 40: Most reported challenges – Private sector



The COVID-19 pandemic had a significant impact on the revenues of most private sector organizations between March and December 2020, relative to the same period in the previous year. Sixty per cent of all companies in the sample reported a reduction in revenues in this period (figure 41). For most of these firms, the reduction in revenues was very significant. Notably, 29 per cent of firms reported a revenue decrease of 50 per cent or more. In addition, 19 per cent of companies reported a fall of between 10 per cent and 50 per cent, and 11 per cent a fall of less than 10 per cent.

Figure 41: Impact of the COVID-19 pandemic on company revenues, March-December 2020

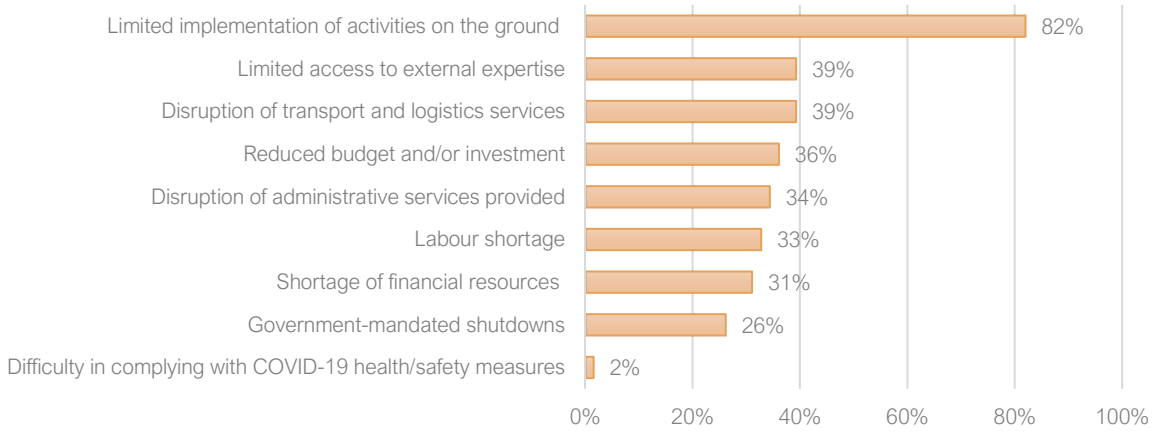


Government

The limited implementation of activities on the ground is by far the COVID-19-related challenge most reported by public sector institutions (figure 42). Not less than 82 per cent of surveyed government institutions indicate that they were required to cancel, postpone, or adjust training workshops, seminars, field visits, and related activities.

In addition, over one third of surveyed public institutions reported being negatively affected by the reduced access to external expertise, disruptions in transportation and logistics services, reduced budgets and/or investment, and disruptions on their abilities to provide administrative services (including the creation of new administrative procedures to address the pandemic). Furthermore, over one quarter of surveyed public institutions were affected by labour shortage, financial resource shortage, and government-mandated shutdowns. By contrast, only 2 per cent of governmental organizations faced difficulties in complying with COVID-19 health and safety measures.

Figure 42: Most reported challenges – Government

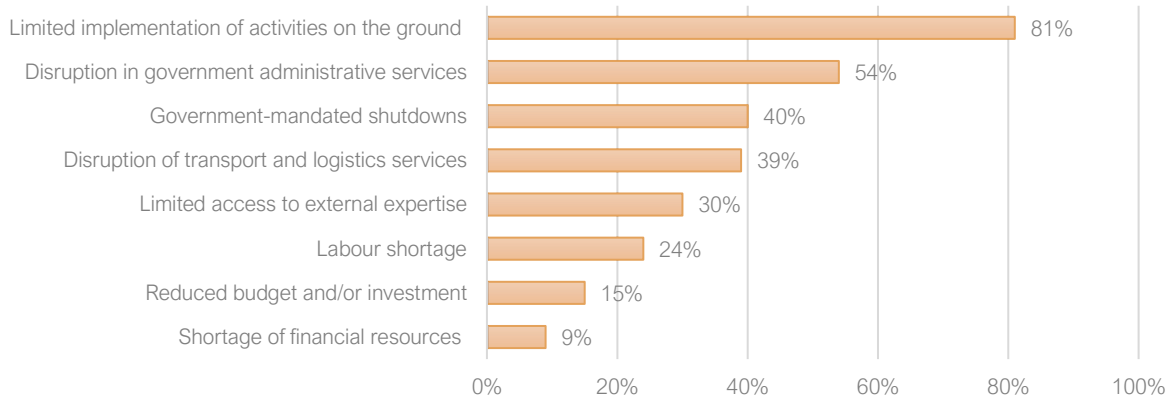


Support Organizations

The limited implementation of activities on the ground is the COVID-19-realted challenge most reported by support organizations (figure 43). Over 80 per cent of surveyed academic institutions, business support organizations, certification bodies, NGOs and international organizations indicate that pandemic forced them to cancel, postpone, or adjust workshops, seminars, field visits, and related activities. This result is similar to the one observed in the public sector, where reduced on-ground activity was also the most cited challenge, reported by 82 per cent of respondents.

The disruption in administrative government services was the second most reported challenge among support organizations (54 per cent), followed by government-mandated shutdowns (40 per cent), and the disruption of transport and logistics services (39 per cent). Limitations in the access to external experts was also identified as a challenge, although by a lower share of respondents than in the public sector (30 per cent vs. 39 per cent). Reduced budget or investments (15 per cent) and shortage of financial resources (9 per cent) were also less prevalent among support organizations than among private and public sector organizations.

Figure 43: Most reported challenges – Support organizations

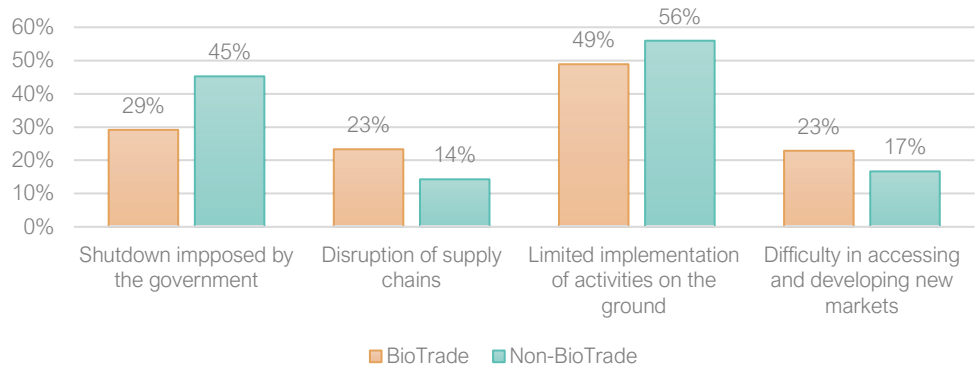


BioTrade-related respondents[15]

The challenges arising from the COVID-19 pandemic were reported in similar magnitudes between BioTrade-related respondents and non-BioTrade ones in most cases. However, certain challenges seem to have disproportionately affected either one or the other of the two groups. Government-mandated shutdowns, for instance, affected three non-BioTrade respondents for every two BioTrade ones. Disruptions of supply chains on the other hand, were reported by 23 per cent of BioTrade-related respondents against 14 per cent of non-BioTrade ones (figure 44).

Other challenges that present notable differentials, albeit to a smaller extent, are the limited possibility to implement activities on the ground, affecting non-BioTrade respondents by 7 percentage points more. Finally, difficulties in accessing or developing new markets, was reported as a challenge by 23 per cent of BioTrade-related respondents, against 17 per cent of non-BioTrade ones.

Figure 44: Challenges with the largest gap between BioTrade vs. non-BioTrade respondents



[15] Certain of the reported challenges only relate to one of the institutional groups in which respondents were divided. For instance, "difficulties in accessing and developing new markets" was available as an option only for private sector respondents and "supply chain disruptions" to all but government respondents, while others, such as "government-mandated shutdowns" could be selected by any respondent, independently of their institutional group. Since this subsection is on differentials between BioTrade and non-BioTrade respondents, however, all challenges were included in the analysis. This is valid for all BioTrade vs. non-BioTrade comparisons throughout this report.

5. Solutions implemented by respondents

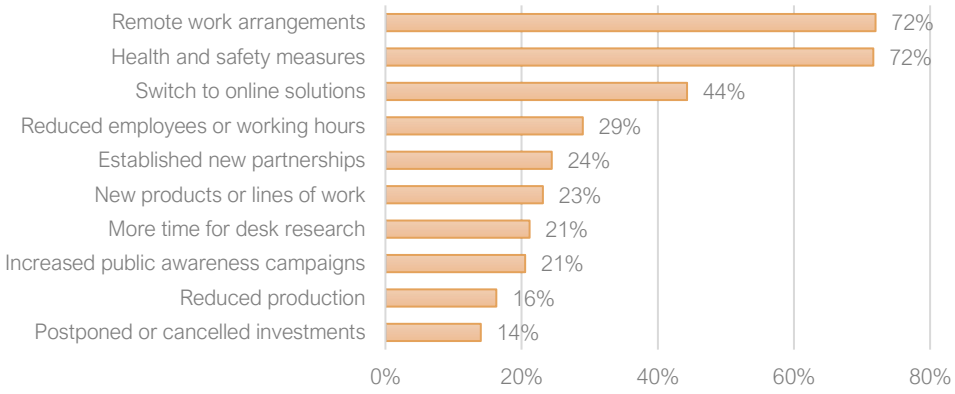
a) Responses to COVID-19

Both individuals and organizations have been forced to find alternative solutions in order to adapt to the extraordinary circumstances caused by the advent of the COVID-19 pandemic and be able to continue, even partially, to implement their operations and activities.

For instance, no less than 72 per cent of all respondents reported implementing remote work arrangements and new health and safety measures (figure 45). Other measures widely undertaken, albeit to a lesser degree include adopting or upgrading existing online solutions such as teleconferencing and e-learning platforms (44 per cent) and reducing the number of employees or working hours (29 per cent). Just under a quarter of respondents reported establishing new partnerships with additional partners or clients (24 per cent) and diversifying their products or lines of work (23 per cent), while roughly one out of five respondents reported dedicating more time to desk research and working to increase public awareness campaigns. Having to decrease the production of goods and services was cited by 16 per cent of respondents and 14 per cent stated having to postpone or cancel investments.

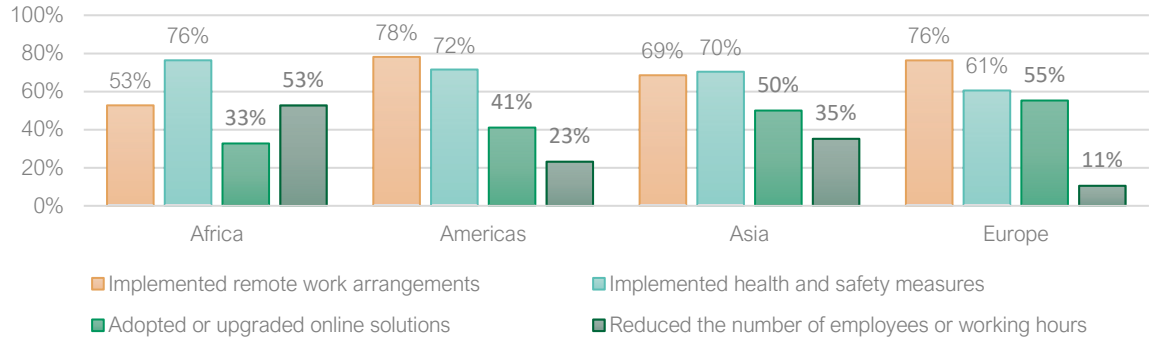
It is interesting to note how, globally, solutions explicitly linked to sustainability such as starting to implement sustainable business models and practices have been reported by less than one for every ten respondents (7 per cent). They are only ranked fifteenth among the measures most taken in response to the COVID-19 pandemic and are hence not displayed in figure 45.

Figure 45: Ten measures most taken in response to COVID-19 – Full sample



From a regional perspective, remote work arrangements were implemented predominantly in Europe and in the Americas, the two regions with shares above the global average (figure 46). In Asia, this figure was just below the global average (69 per cent) while in Africa just over half of respondents reported having implemented measures of this type. Adopting or upgrading online solutions follows a similar, albeit not identical trend – Europe counts the most respondents citing this measure, with 55 per cent of respondents selecting that option, Asia and the Americas follow somewhat behind with 50 and 41 per cent, while in Africa one in three respondents reported moving to online solutions to face the pandemic. For reference, the global average on this measure is 44 per cent.

Figure 46: Measures most taken in response to COVID-19, by region



Health and safety measures were also widely implemented globally, with at least 70 per cent of respondents reporting having implemented them in any given region. While the American continent matched the global average of 72 per cent, both Europe (61 per cent) and Asia (70 per cent) were below it. On the other hand, 76 per cent of African respondents reported implementing health and safety measures.

Layoffs and reduced shifts were less implemented than other measures in all regions except for Africa, where 53 per cent of respondents reported reductions in the number of employees and working hours, more than those reporting implementing new online solutions and the same share of those implementing remote work arrangements. For other regions that figure is 35 per cent in Asia, while both the Americas and Europe were below the global average of 29 per cent with 23 and 11 per cent respectively.

While it would undoubtedly be of interest to find out whether the implemented measures in response to the COVID-19 pandemic had a positive influence on the performance of the organization implementing them, it is impossible to infer from the responses provided to the survey. Similar to what was done with the responses regarding sustainability efforts, an interesting angle of analysis is to observe which actions those respondents reporting a positive impact on their operations since the advent of the pandemic have implemented the most. Figure 47 shows all the measures for which this proportion was higher than the global average of 17 per cent.

The first two response measures represented on figure 47 are increasing the production of goods and services and beginning to source materials from new suppliers. 67 per cent of the respondents selecting the former also reported positive impacts from the pandemic, while this figure is 44 per cent for the latter. However, despite the relatively strong correlation, not much can be inferred from these since the link of causality could run in either direction – organizations may have increased their production *because* of the positive impacts perceived from the pandemic, rather than the other way around.

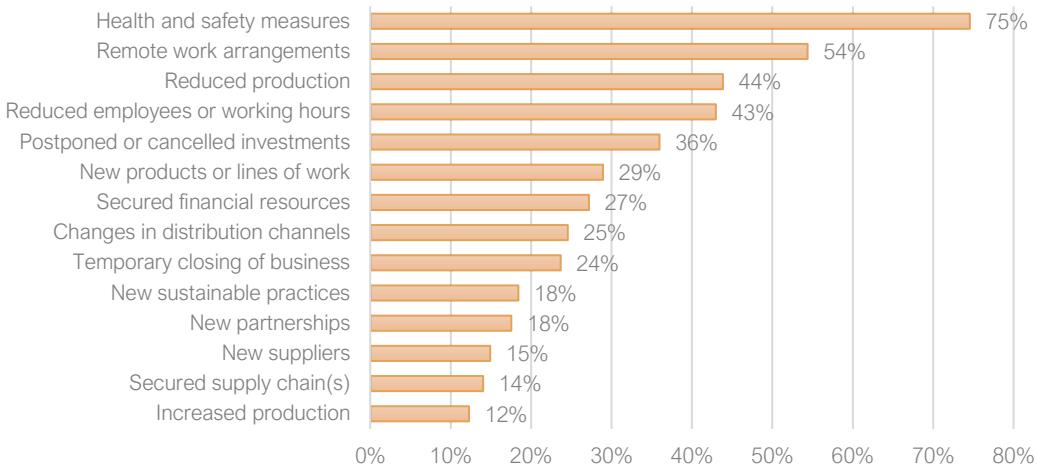
For the measures that follow, on the other hand, the direction of causality, albeit far from certain, seems to be more defined, according to logic. Securing supply chains and diversifying distribution channels, in fact, can be expected to be the cause rather than the effect of improvements in an organization's operations and, for both these measures, the proportion of respondents reporting positive impacts is more than double the global average.

Interestingly, starting to implement sustainable business models and practices also appears to help channel the impacts of the COVID-19 pandemic into positive outcomes, with more respondents (10 percentage points higher) reporting positive impacts than the global average. For those having stated diversifying their products or lines of work and establishing new partnerships this excess is of 4 and 2 percentage points respectively.

Private sector

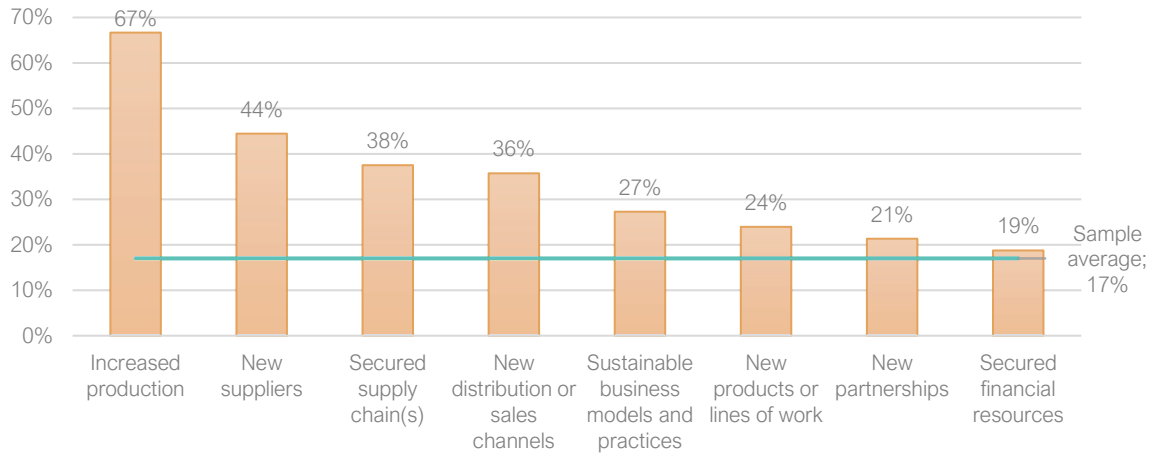
In contrast to global figures (figure 45), health safety rather than remote working was prioritised by respondents from the private sector. In fact, 75 per cent of them – a figure above the global average of 72 per cent – reported having implemented health and safety measures with remote work arrangements coming a not-so-close second with 54 per cent (figure 48).

Figure 48: Measures taken in response to COVID-19 – Private sector



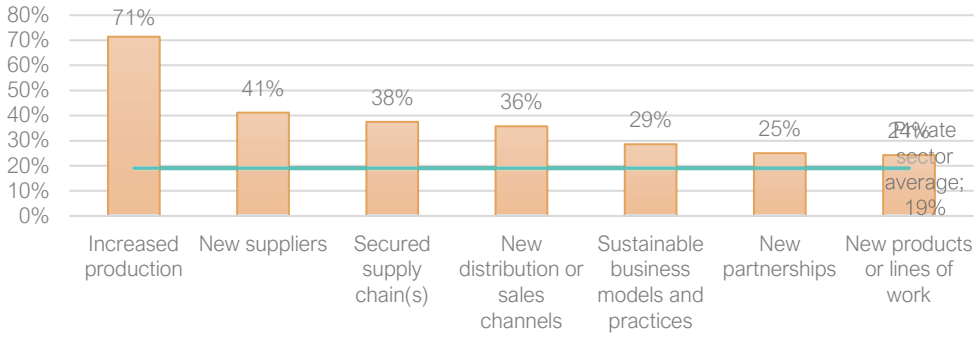
In addition, the pandemic also appears to have had an impact on companies' productive capacity, namely in the areas of output, workforce, and investment. In particular, 44 per cent of respondents reported having to reduce production of their products and services, the highest share across all institutional groupings. In addition, 43 per cent were forced to reduce the number of employees or the number of working hours, 36 per cent reported having to postpone or outright cancel investments while nearly a quarter (24 per cent) had to close their business.

Figure 47: Correlation between measures implemented and positive impacts from the COVID-19 pandemic – Full sample



However, some respondents reacted proactively to the exceptional circumstances by diversifying or creating additional products or lines of work (29 per cent), securing additional financial resources (27 per cent), increasing or diversifying their distribution channels (25 per cent), by starting to implement sustainable business models and practices and establishing new partnerships (both 18 per cent). Other such measures include sourcing inputs from new suppliers (15 per cent), securing current supply chains (14 per cent) and, to a lesser extent, ramping up the production of goods and services (12 per cent).

Figure 49: Correlation between measures implemented and positive impacts from the COVID-19 pandemic – Private sector

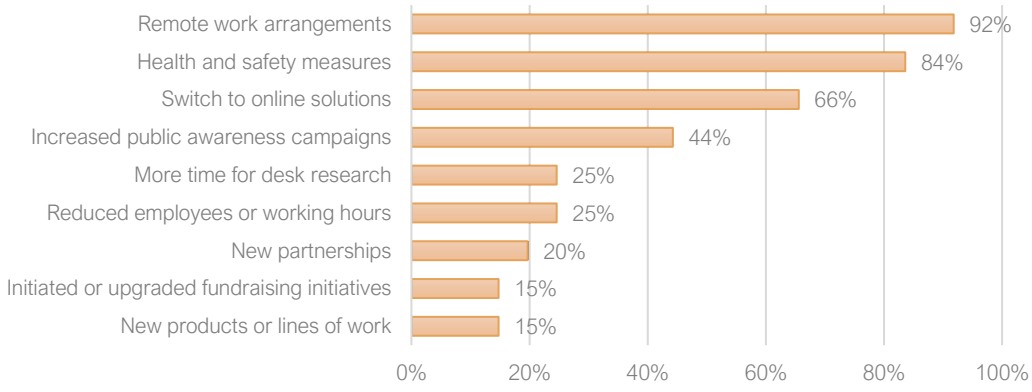


Regarding the linkages between implemented measures and positive outcomes from the pandemic impacts, the figures for respondents from the private sector (figure 49) nearly match those for the full sample and therefore the analytical conclusions remain the same. The two measures presenting the highest correlation with positive impacts, increased production and sourcing from new suppliers, are also those for which the direction of causality between the measure itself and the positive impact perceived is the most ambiguous. For the other measures presenting a positive correlation, the causality can be expected to be stronger even though the correlation itself is weaker. Nevertheless, it should be noted that a higher share of private sector respondents stating having started to implement sustainable business models and practices also reported positive impacts from the COVID-19 pandemic (29 per cent), when compared to the average of all private sector respondents (19 per cent).

Government

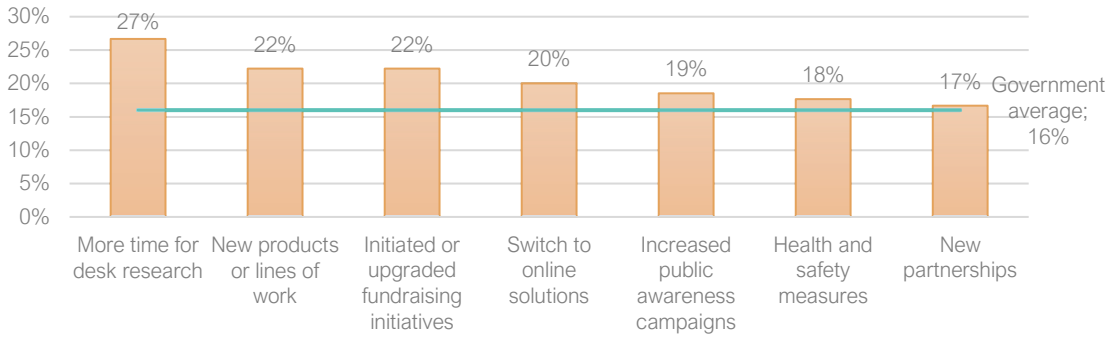
An overwhelming majority of respondents from government institutions reported implementing remote work arrangements (92 per cent) and health and safety measures (84 per cent) – well above the global average of 72 per cent and respondents from the other institutional groups (figure 50). Further two thirds of respondents stated adopting or upgrading online solutions such as e-learning and teleconferencing platforms for their activities.

Figure 50: Measures taken in response to COVID-19 – Government



Government respondents also largely reported their institutions branching out and diversifying their activities to adapt to the circumstances brought by the pandemic: 44 per cent stated an increase in public awareness campaigns, a quarter mentioned dedicating more time to desk research, one in five reported moving to establish new partnership with additional stakeholders or actors, while 15 per cent responded that they ramped up fundraising activities or expanded into new products or lines of work. Nevertheless, a quarter of all respondents from public institutions also reported having to reduce the number of employees or working hours.

Figure 51: Correlation between measures implemented and positive impacts from the COVID-19 pandemic – Government

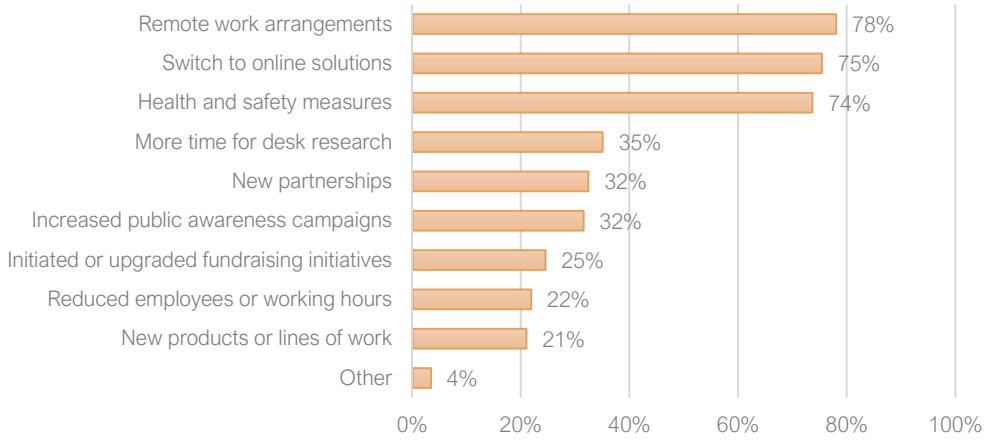


For respondents affiliated with government agencies, the correlation between implemented actions and a positive impact from the pandemic is less evident. While for government respondents that reported having dedicated more time to desk research, the share of those who also reported positive impacts from the pandemic was 11 percentage points higher than the average for all government sector respondents (16 per cent), for the other measures this differential is much smaller (figure 51). In fact, this differential accounts for 6 percentage points for respondents having diversified into new products or lines of work and initiating or upgrading fundraising activities, for 4 percentage points for those having switched to or upgraded online solutions, and for 3 percentage points for those investing into increased public awareness campaigns. Positive impacts from the pandemic were in excess of the public sector average for those implementing health and safety measures and those establishing new partnerships by 2 and 1 percentage points, respectively.

Support organizations

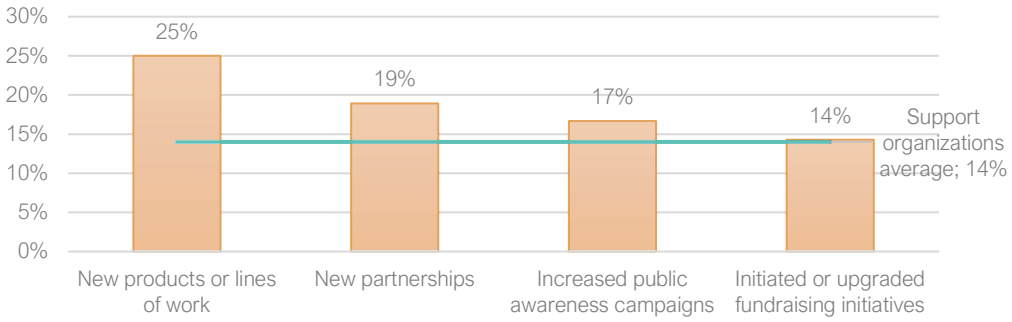
Not unlike for government institutions, responses from support organizations are also heavily skewed towards remote work arrangements, the adoption or upgrading of online platforms and the implementation of health and safety measures, each of these having been reported by roughly three out of every four respondents (figure 52).

Figure 52: Measures taken by respondents in response to COVID-19 – Support organizations



The other measures reported by support organizations are much more equally distributed. About one third of respondents mentioned dedicating more time to desk research, working towards establishing new partnerships and increasing public awareness campaigns. Furthermore, a quarter stated they initiated or upgraded fundraising activities and just over a fifth reported diversifying or creating new products or lines of work. However, 22 per cent of respondents reported having to reduce the number of their employees or of working hours.

Figure 53: Correlation between measures implemented and positive impacts from the COVID-19 pandemic – Support organizations

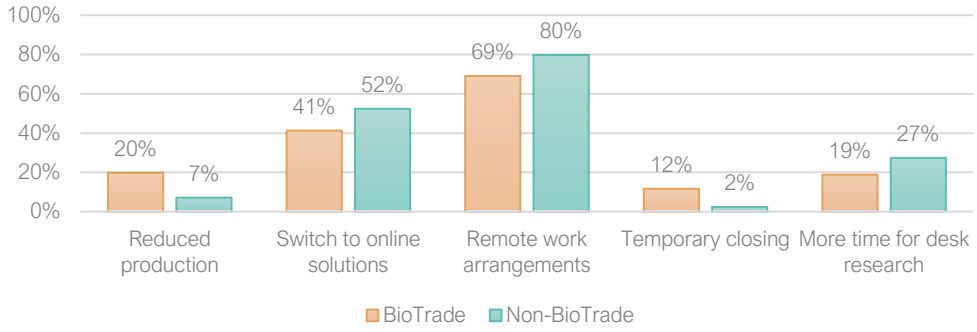


For respondents affiliated with support organizations, only few measures exceeded, or even met, the institutional grouping average in terms of respondents also reporting an overall positive impact of the COVID-19 pandemic on their operations (figure 53). 25 per cent of those who stated having diversified into new products or lines of work also reported positive impacts, 11 percentage points more than the support organizations' average of 14 per cent. This differential decreases to 5 percentage points for those respondents mentioning having established new partnerships and to 3 percentage points for respondents that have increased public awareness campaigns. While it is not possible to establish a direct causation between these measures and the positive impacts perceived by those who implemented them, the consistency in which they appear across all sectors and levels of analysis provide a sufficient base to infer a causal link to some extent.

BioTrade-related respondents

The frequency with which implemented measures against the COVID-19 pandemic were reported did not present great differences between Bio-Trade and non-BioTrade respondents. The ones that saw the biggest differentials in report rates – between 9 and 13 percentage points – are illustrated in figure 54.

Figure 54: Solutions with the largest gap between BioTrade vs. non-BioTrade respondents

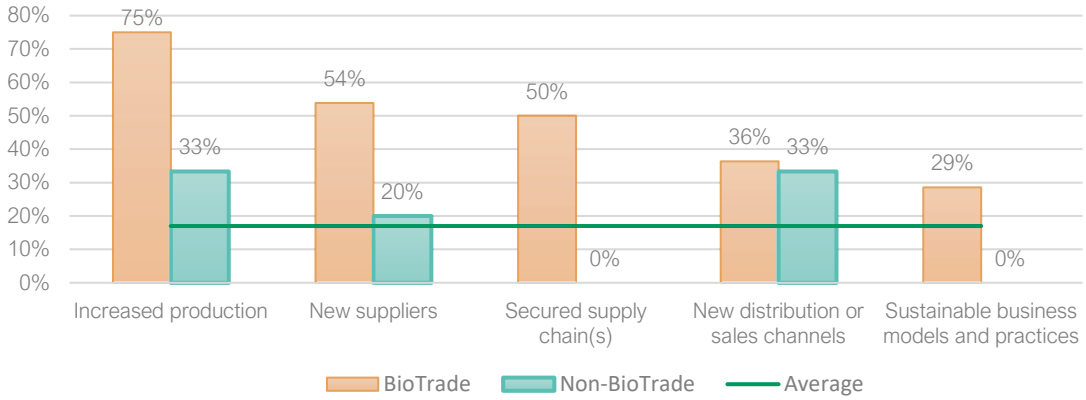


The COVID-19 response with the largest differential was the reduced production of goods and services, which was reported by nearly three times more BioTrade respondent than non-BioTrade ones. Adopting or upgrading to online solutions as well as implementing remote work arrangements on the other hand have been reported by a larger share of non-BioTrade respondents – 52 against 41 per cent and 80 against 69 per cent respectively. The temporary closing of business as a response to the COVID-19 pandemic was reported by 12 per cent of BioTrade-related respondents, against only 2 per cent of non-BioTrade ones, while dedicating more time to desk research was reported by 27 per cent of the latter – a difference of 8 percentage points over their BioTrade counterparts.

When looking at the measures implemented in reaction to the COVID-19 pandemic for which the proportion of respondents was higher than the average one thing is immediately evident. For BioTrade-related respondents there are more measure presenting a positive correlation with positive impacts from the pandemic than for any

of the institutional groups as well as the full sample average. In fact, as many as nine of the options available for selection in the survey presented a positive correlation of this kind. Nevertheless, for questions of space only the top five options are presented in figure 55.[16]

Figure 55: Correlation between measures implemented and positive impacts from the COVID-19 pandemic – BioTrade-related respondents



A second aspect that is noticeable in the case of BioTrade-related respondents is that the rates of positive impacts themselves are much higher. This holds even if the top two options – increased production and new suppliers – are not considered as the direction of causation cannot be inferred. In fact, half of the respondents that reported securing existing supply chains also reported positive impacts from the pandemic, a noticeably higher percentage than for any other group analysed. The only exception to this trend is the option to diversify distribution or sales channels, for which respondents consistently reported positive impacts at a rate of roughly one third across all groups analysed above.

When comparing these figures between BioTrade and non-BioTrade respondents a gap is also evident. For instance, half of BioTrade-related respondents stating having secured their supply chains also reported positive impacts from the pandemic, against none of their non-BioTrade counterparts. Similarly, 29 per cent of BioTrade-related respondents implementing sustainable business models and practices also reported positive impacts from the pandemic, versus none of non-BioTrade ones.

In addition, BioTrade-related respondents presented higher rates of positive impacts than their non-BioTrade counterparts for all measures implemented but two: increasing public awareness, for which 27 per cent of non-BioTrade respondents reported positive impacts against 15 per cent of BioTrade ones, and increasing fundraising activities – 22 per cent against 14 respectively.

Successful strategies implemented[17]

Several actions have been adopted by different stakeholders to successfully cope with the pandemic and/or capture the opportunities generated by the pandemic. The most quoted ones are implementing preventing measures and biosecurity protocols, switching to digital solutions, adjusting working arrangements, cooperating with partners and peers, and providing direct support to communities or suppliers.

For respondents from the **private sector**, the most highlighted successful actions include adjustments in working arrangements (remote, shifts or part time work arrangements), digitalization and establishing business-to-business or business-to-consumers actions, as well as implementing health and safety measures and protocols. In all regions, companies focused on reducing costs or investments, concentrating on core business areas and/or where there is demand, both in local and international markets. Further actions include diversifying markets, clients and products, and strengthening or establishing new distribution or sales channels. Reaching out to other

[16] To see the question as well as the full range of options available, see annex 3, question 13.
[17] Prepared by Lorena Jaramillo (DITC/UNCTAD) with inputs from Julian Benda (DITC/UNCTAD).

actors such as governments or development cooperation organizations for accessing financial resources or speed up exporting processes, learning and implementing sustainable sourcing strategies, as well as implementing e-commerce, e-payments and e-marketing through social media, were also listed among the most successful actions implemented.

According to respondents affiliated with the **government**, successful actions related to implementing preventive strategies and biosecurity protocols, digital transformation, teleworking, enhancing partnerships and networks, and financial support and incentives. The digital transformation has facilitated the issuance/renewal of permits, enhanced interjurisdictional coordination, helped the continuity of projects implemented through virtual meetings, supported the reorganization of research goals and activities, fostered and strengthened the use of virtual platforms and broadened the scope of the interventions. For instance, one of the government entities surveyed established a digital platform for sustainable businesses and a permanent communication campaign about it. Fundraising and providing solidarity funds to vulnerable families, facilitating access to internet to beneficiaries, fostering the diversification of products to mitigate the reduced demand for other products, and developing healthy foods and reforestation have been also successful actions reported by government representatives.

In addition to implementing preventive and biosecurity protocols and digitalization, other successful measures adopted by **support organizations** was to adapt their operations through remote or flexible working arrangements; adapted their project planning, implementation and monitoring; decentralized work; reached out to new networks for support and knowledge sharing; and implemented fundraising strategies. Organizing or attending webinars and virtual meetings and trainings was highlighted as the most successful type of action implemented. Only a very limited number of respondents organized face-to-face meetings in compliance with local COVID-19 measures or conducted post-COVID 19 field visits. These actions were aimed at guaranteeing the continuity of the organization's operations and/or project implementation, as well as to continue communicating and collaborating with partners and beneficiaries, including communities in the field, as well as facilitating compliance with COVID-19 measures.

The most successful strategies reported by individual experts relate to remote working, desk research, adapting workplans and complying with COVID-19 measures.

Unsuccessful strategies implemented[18]

One of the aspects emerging from the responses to the questionnaire is that there is no one size fits all strategy; successful and unsuccessful strategies do vary among respondents. For certain private sector respondents, actions that were listed as successful by other did not only not bring any benefits but also negatively affected their business operations, their liquidity, or their access to current and potential markets and clients. These included, for instance, difficulties in collecting produced goods from remote locations, monitoring projects on the ground or guaranteeing quality remotely, as well as e-payments to suppliers and the extensive time and resources needed to develop and commercialize new products to seize current market opportunities.

For some **companies** that continued to operate or invest, particularly at the beginning of the pandemic, the closures, broken sales and distribution channels and uncertainty around the pandemic as well as its duration, have resulted in a series of challenges. These include higher inventories, increased costs associated to working capital and costs, as well as reduced liquidity or increases in debts. The use of teleworking and videoconferences has been beneficial in general, but these benefits become limited when physical presence on the ground is essential for the operation of the businesses, such as in the case of harvesting or conducting R&D projects, among others. Furthermore, some respondents reported how delays in sowing schedules reduced crop productivity and affected downstream activities in the supply chain. For tourism-related activities, cross-border closings were an important limiting factor. More in general, respondents also found obstacles in the limited capacity to use online platforms, to properly implement e-commerce, to virtually present new products, and to conduct online marketing campaigns. Finally, some company respondents also reported unsuccessful efforts to

[18] Prepared by Lorena Jaramillo (DITC/UNCTAD) with inputs from Julian Benda (DITC/UNCTAD).

secure financial and liquidity support from government or other institutions, access to credits or even advance payments from clients.

For **government** respondents, the most mentioned limitations of digitalization were the lack of equipment and connectivity, particularly in remote rural areas, and, in some cases, the additional complexity it has brought to administrative processes. Other reported challenges were due diligence for finance, remote technical assistance, remote flow of information and virtual community meetings, as well as a decrease in the state budget or access to finance from international cooperation organizations.

For **support organization** respondents, unsuccessful strategies were linked mainly to the access to resources, and, in one case, the funding already allocated to a project was withdrawn to be redirected to anti-COVID-19 measures. Other strategies that did not bring the expected degree of success were related to the implementation of activities in the field due to mandatory government closures, acquiring inputs and accessing markets. Conducting virtual conferences or e-learning due to limited or non-existent internet connectivity with beneficiaries in the ground and use of radio or telephone, as well the difficulty to building consensus and co-development of activities in a virtual environment were also cited as unsuccessful strategies.

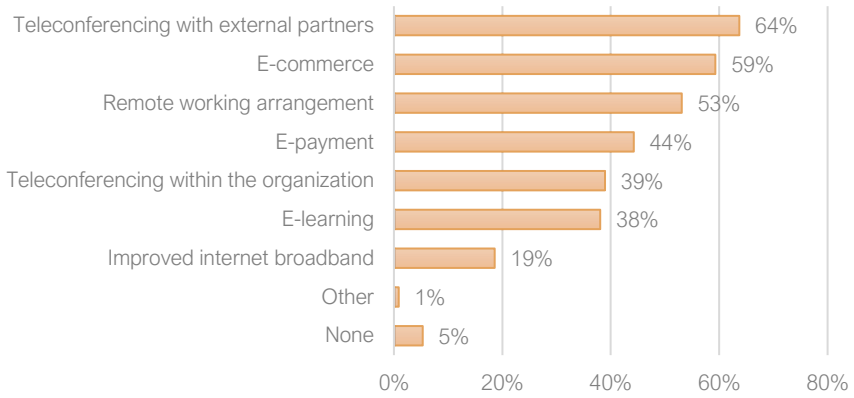
b) Digital solutions

COVID-19 restrictions, imposed by governments to contain and limit the spread of the pandemic, meant that, wherever possible, personal contacts and interactions were avoided. Digital solutions to these limitations have boomed since the advent of the pandemic, most notably in terms of communication technologies, digital marketing and electronic sales and transactions (UNCTAD, 2021). This section presents how the switch to the digital realm may have been implemented and how it impacted respondents to the survey.

Private sector

Many actors in private sectors globally were forced to switch to digital solutions in order to continue – at least partially – with their commercial operations. Most of the options available to respondents from the private sector were widely selected, indicating that respondents in average implemented several of them (figure 56).

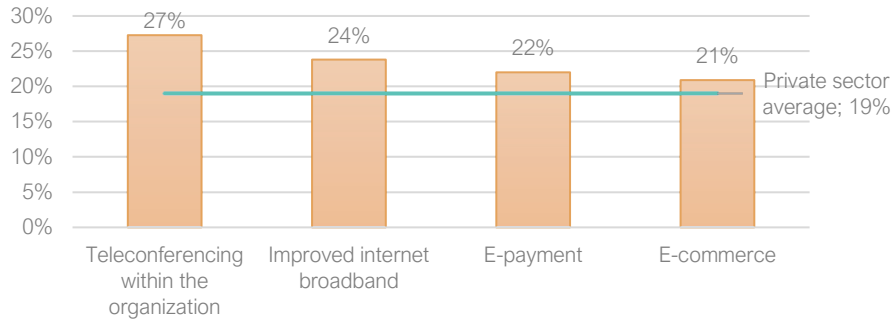
Figure 56: Digital solutions implemented in response to the COVID-19 pandemic – Private sector



Teleconferencing, used for communicating with partners external to the organization, was selected by nearly two thirds of respondents, while over half of respondents reported implementing e-commerce and remote working arrangements (59 and 53 per cent respectively). 44 per cent of respondents stated switching or upgrading to e-payments for their transactions, 39 per cent increased teleconferencing as a means to communicate within their organization, and 38 per cent reported using some form of e-learning as a result of the COVID-19 pandemic. A smaller share – 19 per cent – reported improved internet broadband and a small fraction of respondents mentioned other types of digital solutions.

A correlation analysis was also conducted between the digital solutions implemented in response to the COVID-19 pandemic and the respondents reporting positive impacts from the pandemic on their operations. Here again, establishing a direct causal link is not possible. Nevertheless, observing the correlation may help to shed light on the dynamics at play.

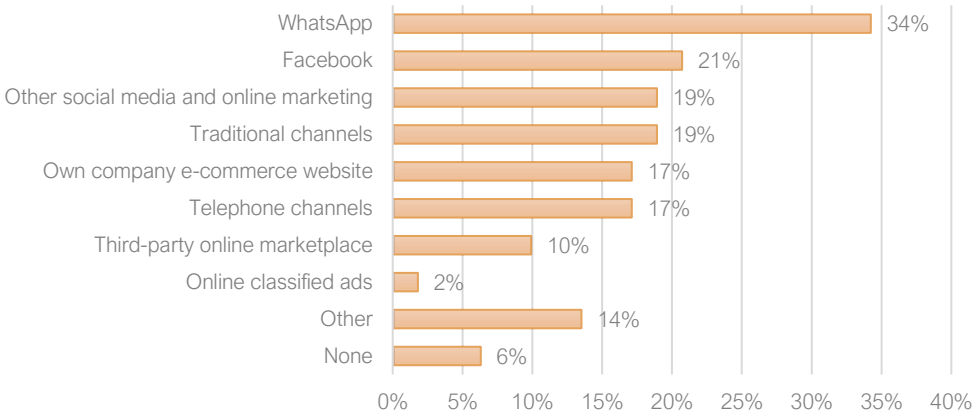
Figure 57: Correlation between digital solutions and positive impacts from the COVID-19 pandemic – Private sector



In particular, switching to teleconferencing platforms to communicate within the organization is the digital solution that appeared to have averted negative impacts of the pandemic the most. In fact, 27 per cent of respondents having chosen this option also reported positive impacts, compared to 19 per cent average for the private sector as a whole (figure 57). Other digital solutions showing a positive correlation with positive impacts from the pandemic are an improved internet broadband (24 per cent), as well as switching to forms of e-payment (22 per cent) and e-commerce (21 per cent).

Private sector respondents were additionally asked through which channels their organization had experienced the highest growth in revenue compared to the same period pre-pandemic. They were able to select up to two responses. WhatsApp was the highest selected response with 34 per cent of respondents. The share of respondents selecting each of the following options was relatively homogeneous, with most of them being selected by between 17 and 21 per cent of respondents (figure 58). These include social media platforms such as Facebook and other social media and online marketing, traditional channels, the own company e-commerce web platform, or telephone sales. Third-party online marketplaces and online classified ads, which contributed to an increase in sales for respectively ten and two per cent of respondents. 14 per cent of respondents mentioned other channels, while 6 per cent did not report any.

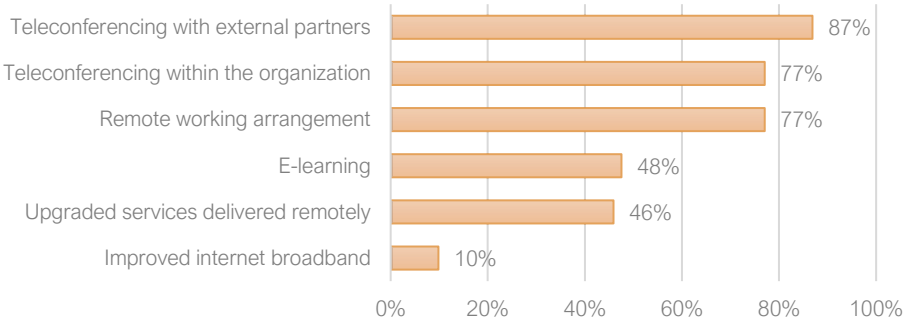
Figure 58: Sales channels providing the highest revenue growth – Private sector



Government

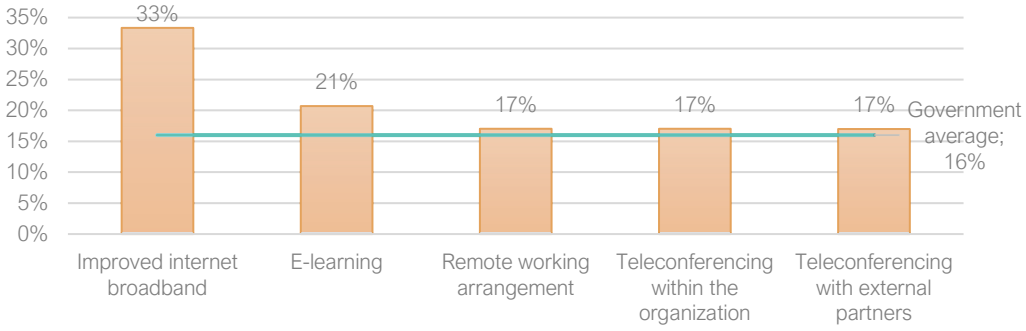
Government sector respondents overwhelmingly reported implementing teleconferencing and online communication channels, both outside and within the organization (87 and 77 per cent of respondents respectively), as well as remote working arrangements (figure 59). E-learning and the upgrading of remotely delivered services were selected by just under half of respondents, while one in ten reported improving the internet broadband.

Figure 59: Digital solutions implemented in response to the COVID-19 pandemic – Government



Responses from government affiliates also showed a positive correlation between certain digital solutions implemented and positive impacts from the COVID-19 pandemic. In particular improving the internet broadband showed a significant differential of more than double the 16 per cent average of all government respondents, while utilizing e-learning platforms for educative purposes correlates to positive impacts at a rate of 21 per cent (figure 60). Remote working arrangements, as well as teleconferencing both within and outside the organizations, which could arguably be considered very closely related measures, all exhibited a slight improvement of 1 percentage point with respect to the average.

Figure 60: Correlation between digital solutions and positive impacts from the COVID-19 pandemic – Government



Support organizations

Not unlike those from the government, respondents from support organizations also overwhelmingly reported having implemented teleconferencing (external and within the organization) and remote working arrangements in response to the COVID-19 pandemic (figure 61). In addition, 56 per cent of respondents stated switching to e-learning, while 37 per cent upgraded the services they deliver remotely. A further 15 per cent improved the internet broadband, and 3 per cent mentioned other digital solutions. Finally, 4 per cent of respondents stated not having implemented any digital solution since the advent of the pandemic.

Interestingly, and in contrast to all the cases analysed so far, responses from support organization affiliates do not show any positive correlation between digital solutions and positive impacts from the pandemic (figure 62). The option selected by respondents with the highest rate of positive impacts are e-learning measures, which merely matches the average for support organization respondents.

Figure 61: Digital solutions implemented in response to the COVID-19 pandemic – Support organizations

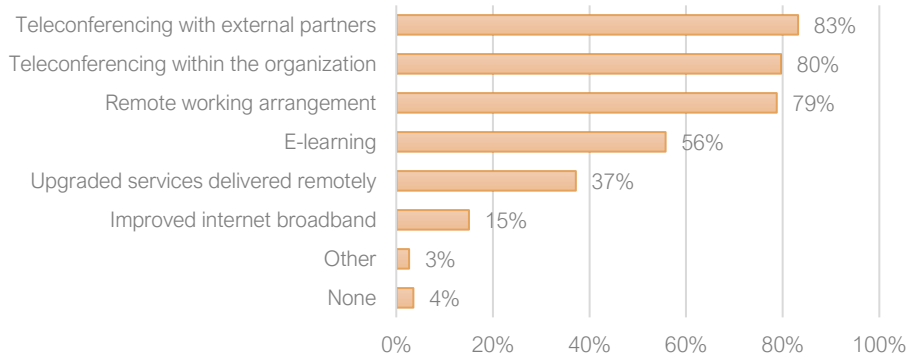
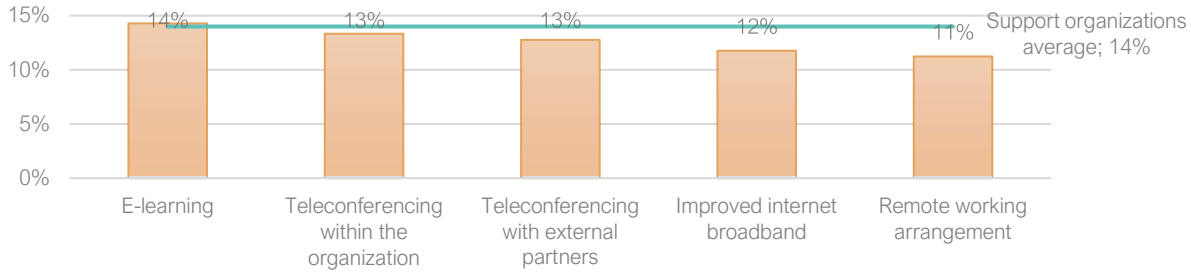


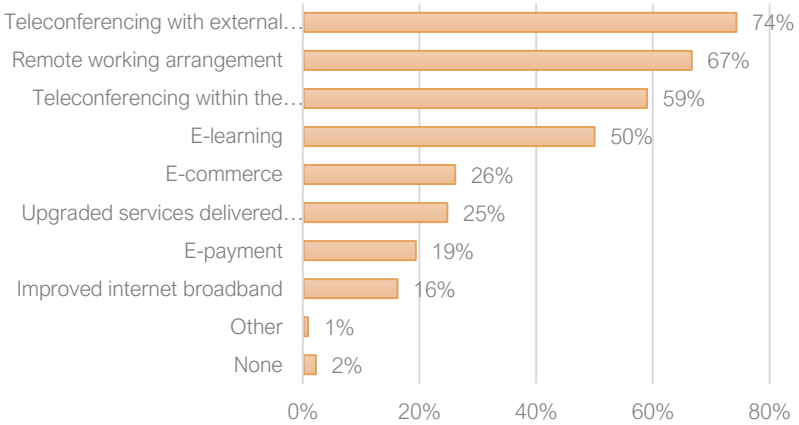
Figure 62: Correlation between digital solutions and positive impacts from the COVID-19 pandemic – Support organizations



BioTrade-related respondents

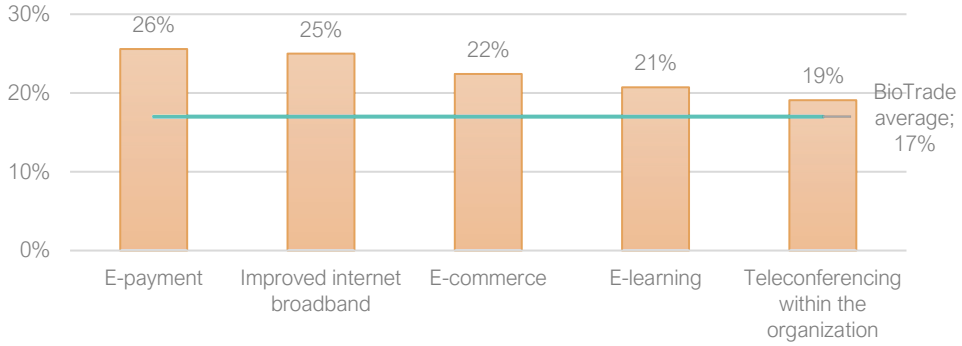
BioTrade-related respondents also selected teleconferencing, both within and outside their organization, and remote working arrangements as the most common digital solutions implemented in response to the pandemic, albeit to a lesser extent (figure 63). Additionally, half of respondents stated having used e-learning, while around one quarter reported having switched to e-commerce and having upgraded the services they delivered remotely (26 and 25 per cent, respectively). 19 per cent of respondents reported switching to electronic forms of payment and 16 per cent improved the internet broadband. One per cent of BioTrade-related respondents mentioned other digital solutions and two per cent reported not implementing any.

Figure 63: Digital solutions implemented in response to the COVID-19 pandemic – BioTrade-related respondents



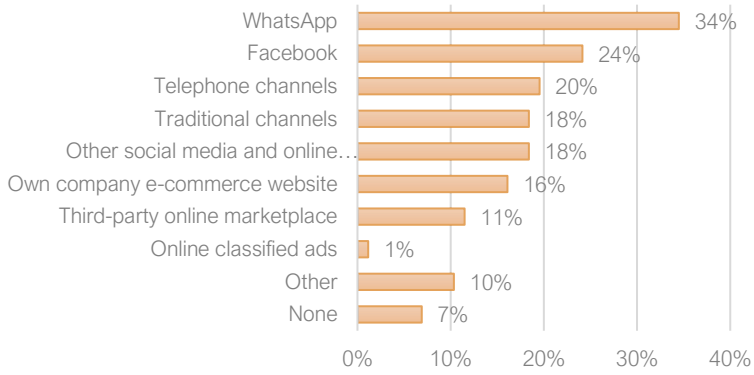
For BioTrade-related respondents, all available options exhibit a positive correlation with positive impacts from the COVID-19 pandemic but one – the upgrade of services delivered remotely. The five measures for which the

Figure 64: Correlation between digital solutions and positive impacts from the COVID-19 pandemic – BioTrade-related respondents



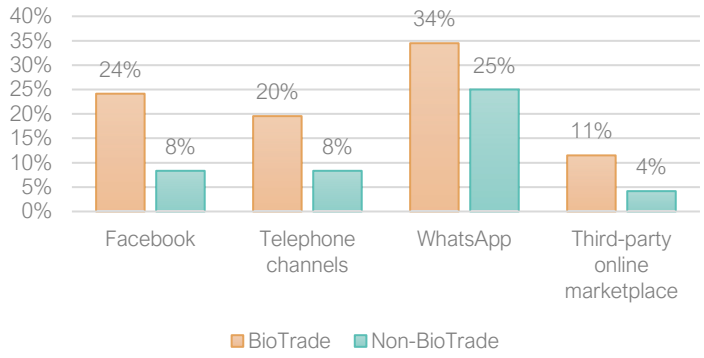
highest share of respondents have also reported positive impacts are illustrated in figure 64. Switching to e-payments for monetary transactions has a differential with the average for BioTrade-related respondents of nearly 10 percentage points, at 26 per cent. Improving the internet broadband shows a similar correlation with 25 per cent, and switching to or enhancing e-commerce platforms with 22 per cent. 21 per cent of respondents selected having implemented more e-learning measures also reported positive impacts, while this figure is 19 per cent for those having started to use teleconferencing within their organization.

Figure 65: Sales channels providing the highest revenue growth – BioTrade-related respondents



Private sector respondents implementing or supporting the implementation of the BioTrade P&C also identified the sales channels through which they experienced the highest revenue growth, compared to the same period pre-pandemic (figure 65). Similarly to the whole of private sector respondents, WhatsApp and Facebook are the most selected options, with just over a third and nearly a quarter of respondents selecting them. Contrarily to overall private sector respondents however, the third most selected response was telephone channels, which was chosen by one in every five respondents. Traditional sales channels and other social media platforms were both selected by 18 per cent of BioTrade-related respondents, while 16 per cent of them reported revenue increases mostly through their own company e-commerce website. A smaller share, 11 per cent, stated their revenue growth happened through third-party online marketplaces while only one per cent reported it happened through online classified advertisement. Seven per cent reported none.

Figure 66: Sales channels providing the highest revenue growth – BioTrade vs. Non-BioTrade



The biggest gap in responses between BioTrade-related respondents and non-BioTrade ones is illustrated in figure 66. Increased revenue through Facebook and telephone sales were reported more by BioTrade-related respondents with a difference of over 10 percentage points. Facebook in particular, was selected by three times

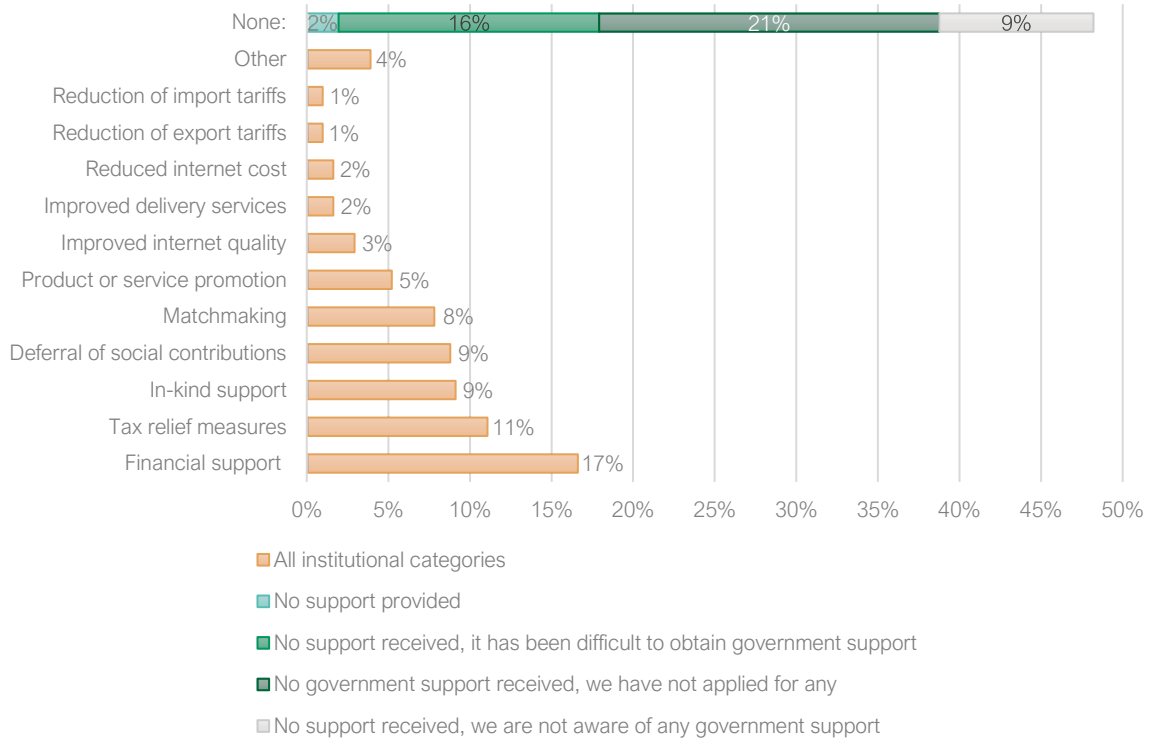
as many BioTrade-related respondents, and telephone channels by well more than double. Despite by a smaller difference, sales through WhatsApp were selected by just over a third of BioTrade-related respondents against a quarter of non-BioTrade ones. Finally, third party online marketplaces, albeit selected by a minority of respondents overall, was nearly three times more popular among BioTrade-related respondents than among their non-BioTrade counterparts.

c) Government support

Since the advent of the COVID-19 pandemic governments have stepped in to provide support to affected actors in the economy. This section analyses to what extent this support has been obtained across the surveyed institutional groupings, as well as which measures were perceived as being the most effective and necessary.

Almost half of all the survey respondents (46 per cent) reported not benefiting from government support. The reasons given for it were varied, ranging from because it was difficult to access (16 per cent), did not apply for it (21 per cent) and were not aware of any available from of government support (9 per cent) (figure 67). This is in contrast with government respondents, only two per cent of which stated their government provided no support to stakeholders. For those respondents who reported having benefited from government support, the most chosen options were financial and liquidity support (17 per cent) and tax relief measures (11 per cent).

Figure 67: Government support measures – distribution of total survey respondents[19]



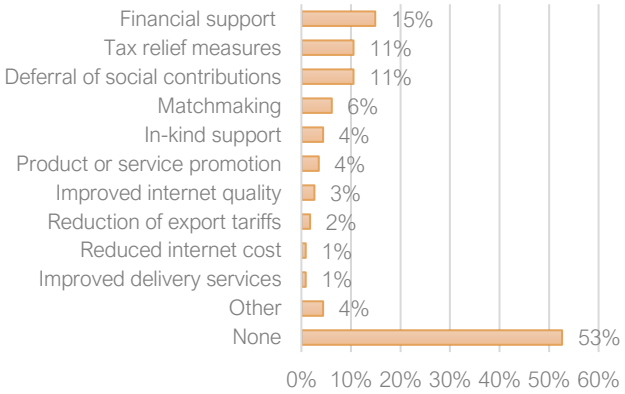
Note: Respondents from all institutional categories but government had three option to state they had not obtained government support, specifying the reason (the green, dark green and grey fractions of the "None" bar). Government respondents however had only one option stating no support had been provided (the turquoise fraction of the "None" bar).

[19] Respondents were able to choose more than one option from a multiple-choice list, which is shown in annex 3, question 18. This means that a respondent could simultaneously select having received one or more forms of support as well as not having received any. This could be due to the fact that perhaps certain participants only received part of the support they applied for or were hoping to receive. Nevertheless, this is impossible to infer from the survey's responses and potential reasons only remain in the realm of speculation.

Private sector

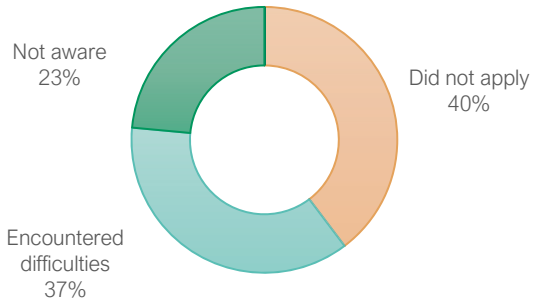
In line with the global average, the options related to no government support measures obtained were the ones most selected by a significant margin by respondents from the private sector (figure 68). In fact, 53 per cent of private sector respondents stated they did not receive any government support. Of these responses, four out of every ten said not having applied for any government support, 37 per cent cited difficulties in securing support as the reason for not having received any, while nearly a quarter stated not being aware of any available public support (figure 69).

Figure 68: Government support measures obtained – Private sector



The highest number of government measures obtained by private sector respondents were related to financial and liquidity support with 15 per cent of all private sector respondents choosing this option. This was followed by tax relief measures and deferral of social security payments or other labour costs, both with 11 per cent (figure 68). Other possible measures were selected by a small minority of respondents – 6 per cent or less.

Figure 69: Reasons for not obtaining government support – Private sector



More than half of the private sector respondents identified financial incentives and liquidity support as the support they needed the most, while just under a third reported measures of fiscal relief (figure 70). The promotion of the products or services provided to stimulate demand, and matchmaking initiatives to connect different stakeholders and create new networks were both selected by 21 per cent of respondents, while the need for improved internet broadband quality was highlighted by one every five.

A smaller share of respondents, between 10 and 14 per cent, selected the options related to improved delivery services, deferral of social contributions and other social costs, the temporary reduction or elimination of import tariffs and in-kind support. 6 per cent of respondents stated no support was currently needed, while the temporary abatement of export tariffs and reduced internet costs were selected by 4 and 3 per cent respectively. One participant mentioned an *Other* option, being the reduction of more generic regulatory barriers.

When comparing the measures private sector respondents report as most needed with those they state they have received it emerges that – albeit some differences – the order of importance in which they appear is not widely different. Financial and liquidity support as well as tax relief measures are the most cited ones in both cases, and matchmaking is the fourth most important one. Of course, some of the positions are different. For instance, support in the form of product or service promotion is the third most needed option but only the sixth most obtained one while, on the contrary, deferral of social contributions and labour costs appears as the third most obtained support measure but is in seventh position among the most needed ones. Overall, however, the broad similarity of both lists seems to indicate that governments were able to identify the most pressing forms of support that were needed by the private sector and to provide it to them.

Nevertheless, conspicuous differences can be observed not in the order of importance of the measures but in their scale. Relatively large gaps exist between the number of respondents stating they need a specific support measure and the number of those who actually received it. For instance, financial and liquidity support was the most needed as well as the most widely obtained measure. However, while nearly two thirds of respondents mentioned being in need of it, only 15 per cent reported receiving any – a gap of nearly 40 percentage points (figure 71). Similarly, albeit to a lesser extent, tax relief measures were needed by nearly three times more respondents than those who obtained them, with a differential of over 20 percentage points. Similar gaps were observed for most other measures too, indicating that while governments succeeded at identifying which types of support were the most necessary ones for the private sector, they seemingly failed at providing them at the scale needed.

Figure 70: Most needed forms of government support – Private sector

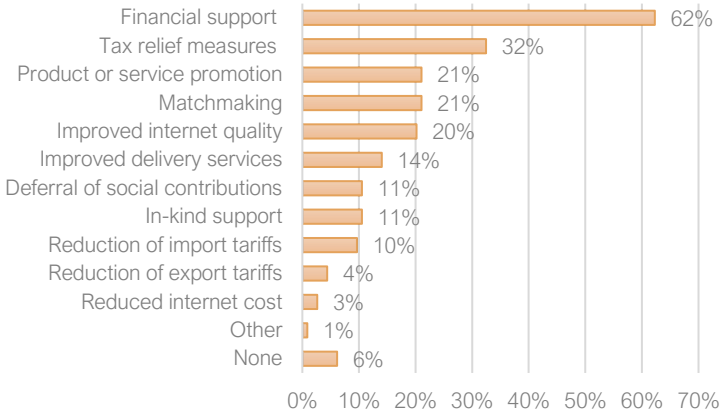
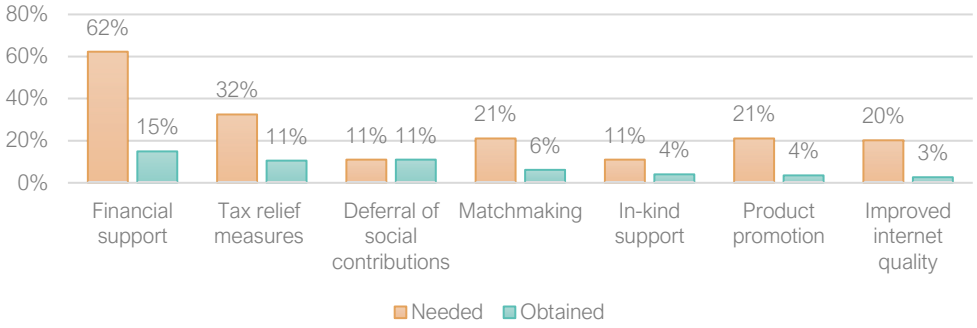


Figure 71: Measures most needed vs. measures obtained – Private sector



Government

Figure 72: COVID-19 related support measures provided – Government

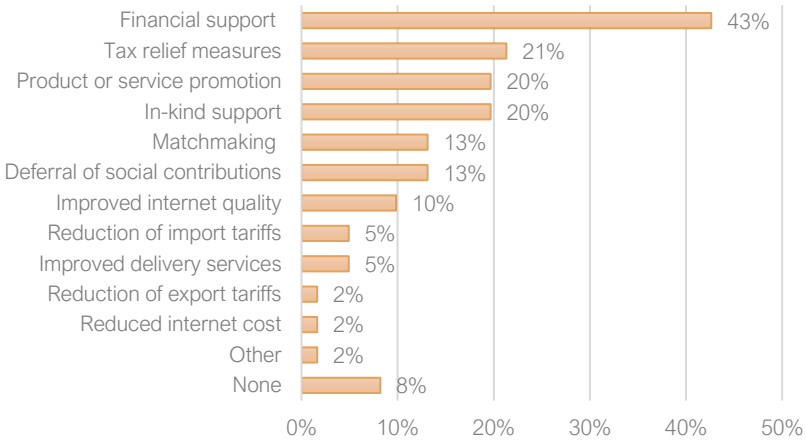


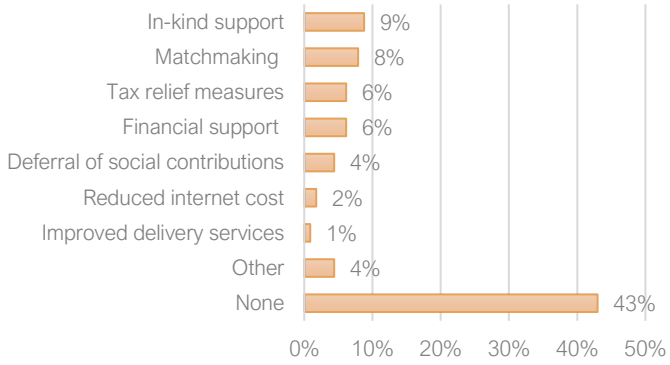
Figure 72 illustrates the government sector responses to the support programmes related to the COVID-19 pandemic their government provided, if any. Government respondents were presented with one option specifying whether their institution had provided or not any support, without any further details on the reason why that might be the case. The striking difference to the other stakeholder responses is that only 8 per cent of government respondents stated that their institution did not provide any type of support, while nearly half of non-government respondents reported not receiving any support across the whole sample.

Regarding the measures provided by respondents from government institutions, 43 per cent were in the form of financial incentives and liquidity support (figure 72). A similar number of respondents stated the following support provided: tax relief measures (21 per cent), promotion of products or services, and in-kind support, such as for example expertise or remote technical assistance (both with 20 per cent). Matchmaking and similar initiatives and deferral of social security payments or other labour costs were reported by 13 per cent of respondents, while one in every ten mentioned their government had improved internet broadband quality. The remaining measures were only mentioned by a small minority of respondents – 5 per cent or less.

Support organizations

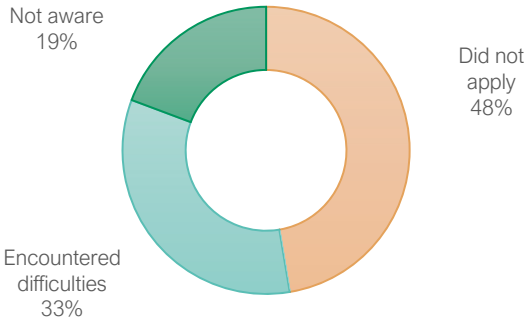
As illustrated on figure 73, the most mentioned forms of assistance received by respondents from support organizations are in-kind support, such as providing expertise or technical assistance (9 per cent), matchmaking or similar activities (8 per cent), tax relief measures and financial incentives support (both 6 per cent). Other measures, including deferral of social contributions, reduced internet broadband cost and improved delivery services were reported by less than 5 per cent of respondents.

Figure 73: Government support measures obtained – Support organizations



Similar to the private sector, a large share of the respondents in this institutional group also selected options related to not having received government support in line with the average of all respondents, albeit slightly below it – 43 per cent, against 46 per cent, respectively. From these responses, almost half stated not having applied for any form of government support, a third mentioned they found it difficult to secure it, while one in five reported not being aware of any form of COVID-related support available (figure 74).

Figure 74: Reasons for not obtaining government support – Support organizations

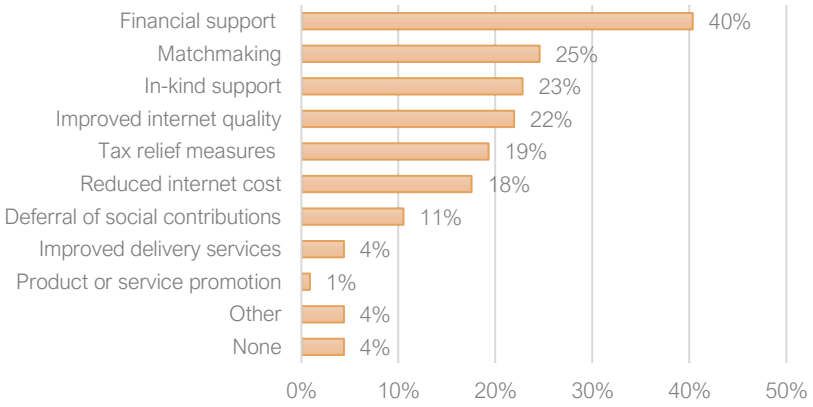


The most needed form of government support, cited by four out of ten respondents from support organizations, are financial incentives and liquidity support (figure 75). Similar to the responses by representatives of the private sector, this was the most selected option, although to a smaller degree.

Furthermore, a quarter of respondents selected matchmaking initiatives as a currently needed form of support, while in-kind support and improved internet broadband quality were selected by 23 and 22 per cent of respondents respectively. Tax relief measures and reduced internet broadband cost – rather than better quality – were selected by 19 and 18 per cent of respondents, while 11 per cent reported the deferral of social security payments and labour costs would be a welcome form of government support. 4 per cent of

respondents stated no support was needed, while other forms of support, including improved postal or delivery systems and the promotion of the products and services provided, were selected by a minority of respondents.

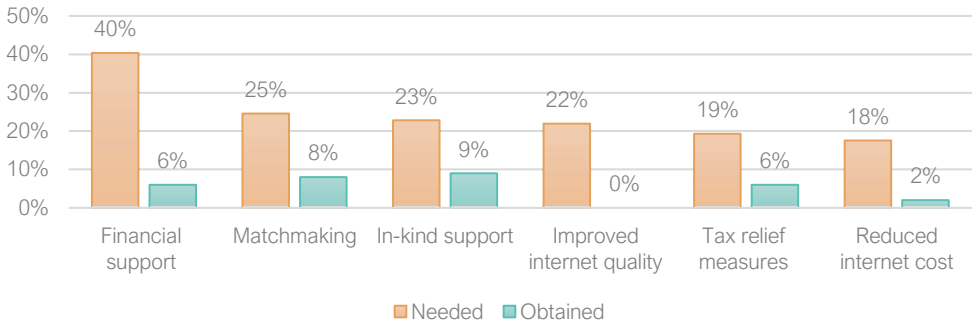
Figure 75: Most needed forms of government support – Support organizations



Not unlike for the private sector, the most needed forms of government assistance by support organizations are broadly in line with the most obtained ones, albeit slightly less clearly. In fact, if the top five most needed forms of support are compared with the top five obtained ones it emerges that the same four measures – financial and liquidity support, matchmaking, in-kind support and tax relief measures – appear in both lists. This seems to suggest that for support organizations, governments were able to broadly identify which measures were most necessary and to provide them to stakeholders.

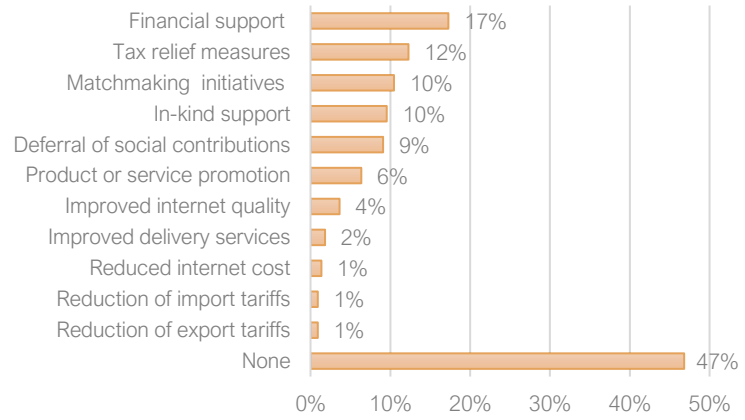
Nevertheless, important gaps in the number of respondents needing versus receiving any specific form of support exist for support organizations too. Most notably, financial and liquidity support was quoted as being most needed by as many as 40 per cent of respondents, while only 6 per cent reported receiving it – nearly 35 percentage points of difference (figure 76). Matchmaking, the second most needed form of public support quoted by a quarter of respondents presented a nearly three-fold gap with those reported having received it, namely 8 per cent. Similar gaps were observed for every measure provided to support organization, suggesting that the limited capacity of governments to provide support measures at the needed scale is a phenomenon extending beyond the private sector and into support organizations as well.

Figure 76: Measures most needed vs. measures obtained – Support organizations



BioTrade-related respondents

Figure 77: Government support measures obtained – BioTrade-related respondents



The forms of government support most obtained by respondents implementing or supporting the implementation of the BioTrade P&C are, *in primis,* financial and liquidity incentives as well as fiscal relief measures, reported by 17 and 12 per cent of respondents respectively (figure 77). Matchmaking initiatives and in-kind support were reported by one in every ten BioTrade-related respondents, while support in the deferral of social security payments and other labour costs was reportedly obtained by 9 per cent of respondents. 6 per cent of respondents reported receiving government support in the promotion of products or services, and improved internet broadband quality was reported by 4 per cent of respondents. Other forms of support were only obtained by a minority of BioTrade-related respondents –2 per cent or less.

Not unlike for the different institutional categories, a disproportionately high number – nearly half – of respondents implementing BioTrade reported not receiving any form of support. Of these, 43 per cent reported not having applied for any form of government support, 37 per cent mentioned having encountered difficulties in securing government support, and one fifth stated not being aware of any form of public support available (figure 78).

When asked about which forms of support were needed by their organization, the option that was selected the most among BioTrade-related respondents was that of financial incentives and liquidity support, which was selected by nearly half of respondents (figure 79). Other popular responses were matchmaking initiatives (23 per cent), tax-relief measures (22 per cent), improved quality of the internet broadband (16 per cent), and in-kind support, for instance in the form of expertise provided or technical assistance (14 per cent).

9 per cent of BioTrade-related respondents stated that a reduction in internet broadband costs would have been useful, 8 per cent argued for improvements in postal and delivery services, 7 per cent mentioned the deferral of social contributions and labour costs is needed, while 6 per cent would have needed support in the form of product or service promotion. The other measures were selected only by a minority of respondents, 5 per cent or less.

When comparing figure 77 with figure 79 it emerges that the order of importance of the most needed forms of government support is relatively similar to that of those that were obtained by respondents, at least for the first four or five entries. Nevertheless, there are significant gaps between the share of respondents stating they needed a specific form of support and those who actually received it (figure 80). Financial and liquidity support measures were reported as being needed by nearly three times as many respondents as those who benefitted from them. This, again, may suggest that governments were right in identifying the most necessary measures for BioTrade-related respondents but were not able to provide them at the necessary scale.

Figure 78: Reasons for not obtaining government support related to the COVID-19 pandemic – BioTrade-related respondents

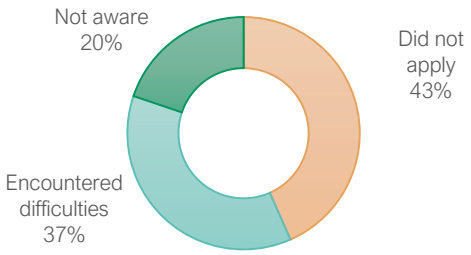
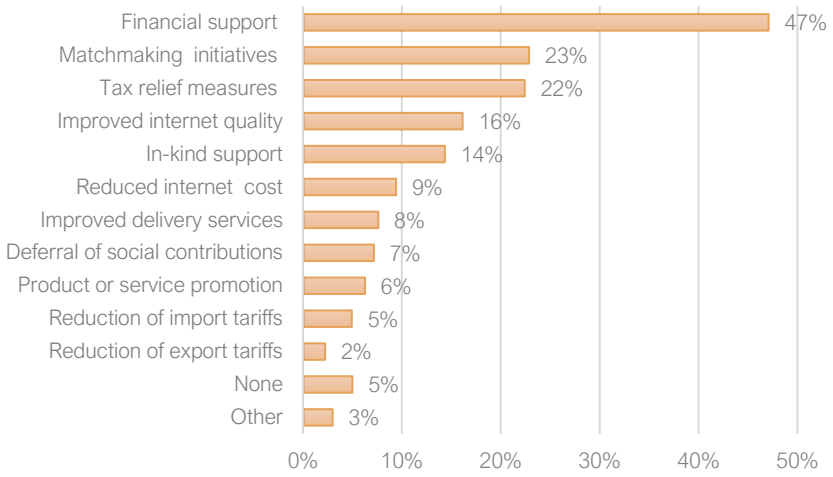
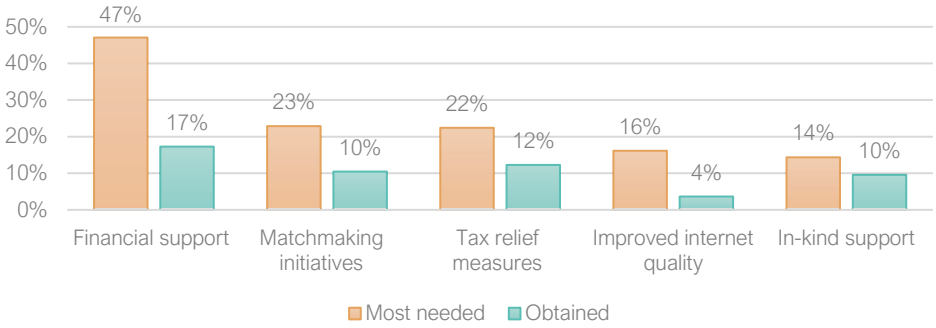


Figure 79: Most needed forms of government support – BioTrade-related respondents



Conversely however, deferral of social contributions was obtained by 9 per cent of respondents, 2 percentage points more than those who have reported it as a needed measure. Support in the form of product or service promotion, on the other hand, was cited as most needed as well as obtained by the same share of respondents – 6 per cent.

Figure 80: Measures most needed vs. measures obtained – BioTrade-related respondents



Geographical distribution of government support measures

From a regional perspective it is interesting to compare how many respondents obtained support from their government with respect to those who did not.[20] Government representatives responses[21] as well as those from respondents that selected at the same time that they received and did not received government support were removed and not considered in the analysis. International organizations have also been excluded from this analysis since by their proper nature they transcend national governments.

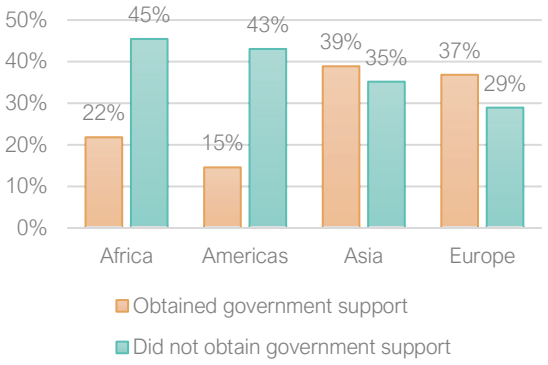
Figure 81 illustrates what percentage of respondents from each region reported receiving COVID-related support compared to those who did not. In Africa and the Americas, the number of respondents who did not receive government support is significantly higher than those who did – roughly double in Africa and nearly three times

[20] Due to the multiple-choice format of this question of the survey, out of the whole sample seven respondents selected answers relative to both receiving as well as not receiving government support – four from the Americas, two from Asia and one from Europe.
[21] The only two respondents from Oceania in the sample are from the government sector. Oceania is therefore not represented in this comparison.

in the Americas. In Asia and in Europe the figures are much closer, with respondents stating they have received support being higher.

There is also a certain diversity across regions in the reasons given by respondents as to why they did not receive any government support. In the African continent, 22 per cent of respondents did not get any government support because they did not apply for it, one third cited difficulties in securing it, while 44 per cent – the highest share among the four regions – reported not being aware of any available support (figure 82).

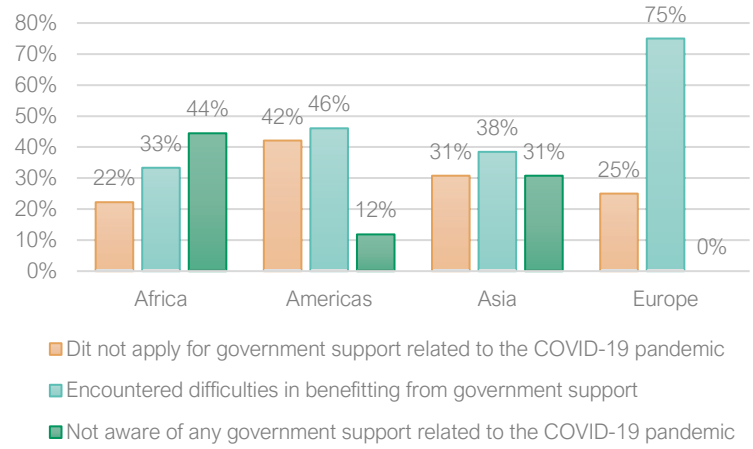
Figure 81: Government support – Regional comparison



Responses by participants from Asia were more balanced: an equal share, 31 per cent, stated either not applying for any support or not being aware of any, while a slightly higher share, 38, per cent, reported having encountered difficulties in securing support.

In the Americas and in Europe support programmes related to the COVID-19 pandemic seemed to be potentially more available. In fact, only 12 per cent of respondents from the American continent and none from Europe reported not being aware of any form of support. Nevertheless, nearly half of respondents from the Americas reported having found it difficult to secure support and in Europe this figure is significantly higher, reaching three quarters of respondents – the highest across all regions. The remaining quarter of European respondents stated they did not apply for support, while this figure for American respondents was much higher: 42 per cent.

Figure 82: Reasons for not securing government support – Regional comparison



SECTION III: CONCLUSIONS AND RECOMMENDATIONS[22]

In general, the impacts of the pandemic and implemented solutions varied between and among the different institutional groups, sectors and regions analysed. For instance, what one stakeholder considered as an opportunity, others may experience as a challenge, and vice-versa. The study findings, therefore, aim to shed light on these underlying dynamics and the implications of the pandemic for stakeholders active in the collection, production, processing, distribution, commercialization, purchase, certification, support or study of biodiversity-based products and services.

The survey showed that there were **opportunities** that emerged from the global COVID-19 pandemic. Nearly one in five respondents reported that the current pandemic impacted their operations in a positive way compared to the pre-pandemic period, with nearly two thirds mentioning these positive effects were sustained at the time the survey was conducted and 15 per cent stated an increase in their sales. Private sector respondents reported the highest positive impacts of all institutional groups, presumably due to emerging business opportunities that arose from diversifying into new markets and new products as well implementing sustainable strategies and practices. In fact, nearly half of them indicated there was increased demand for goods and services they considered as healthy, sustainable, ethical and/or local.

Not all results were positive. **Challenges** arising from the pandemic were felt across all four groups of stakeholders, and to a higher degree than opportunities. Three quarters of all respondents cited negative impacts such as decreases in sales; difficulty in accessing and developing new markets or activities on the ground; and disruptions in transport, logistics, supply chains or government services. Nevertheless, variations were seen in the types of challenges faced by respondents between but also within their institutional group, geographic location as well as the different nature of their activities and operations. For example, a higher share of government and private sector respondents reported negative impacts than for the other institutional groupings, while the duration of the negative impacts was longer for respondents from the private sector, support organizations and individual experts. For those respondents implementing or supporting the implementation of BioTrade and its P&C, negative impacts were reported at a higher share than for those not related to BioTrade. However, the duration of the negative impacts was shorter for BioTrade-related respondents, with the biggest difference seen in the private sector.

Government support played a vital role during the steep economic downturn caused by the COVID-19 pandemic. In general, a certain similarity could be observed between the type of government support offered and that needed by the private sector and support organizations, such as financial and fiscal incentives. Still, discrepancies emerged in terms of the number of those needing support and of those who benefited from it (see figures 71 for private sector respondents, and 76 for support organizations). Around half of respondents from non-government institutional groupings stated not receiving any form of support from the government, a number that contrasts with government respondents, of which only a small minority stated that their institution did not provide any form of COVID-19 related support. From a regional perspective, the biggest gap between the government support measures needed and those received was seen in the Americas and Africa. In contrast, European and Asian respondents reported receiving support in higher numbers than those that did not. The reasons for not being able to receive government support by the private sector and support organizations were difficulty in accessing it and lack of awareness of any support available. Similar trends were seen among BioTrade-related organizations as almost half of them did not receive government support. Of these, more than half stated that they either were not aware of any available government support or that they encountered difficulties in accessing it.

Like other actors, biodiversity-related stakeholders implemented proactive as well as reactive measures or **'solutions' to cope with or benefit from the pandemic**. These include implementing health and safety measures in the workplace, remote working arrangements as well as other digital solutions (e.g. communication technologies, digital marketing and electronic sales and transactions, and teleconferencing). Moreover,

[22] Prepared by Lorena Jaramillo (DITC/UNCTAD) with inputs from Julian Benda, Lika Sasaki and Tamara Richards (DITC/UNCTAD).

respondents also implemented specific activities to capture the opportunities arising from the pandemic (e.g. diversifying markets, products and distribution channels to seize the demand) and to cope with the health and safety measures required (e.g. implementing preventing measures and biosecurity protocols). Successful and unsuccessful strategies varied greatly, and no one-size-fits-all strategy could be identified.

Diversification strategies implemented were inferred to have a positive correlation with positive impacts arising from the pandemic.[23] Particularly, survey respondents stated that diversifying markets, clients and products, and strengthening or establishing new distribution or sales channels, and partnerships were strategies that proved successful in averting negative impacts of the pandemic. These diversification strategies also contributed to reduce the overall risk posed by the pandemic to the operations of biodiversity-based stakeholders.

A **digital transformation** was undertaken by stakeholders to help addressing the restrictions engendered by the pandemic and enabling operations to continue. Successful solutions put in place by the private sector included shifting to various forms of e-commerce, e-payments, e-marketing measures, and exploring new online sales channels particularly through social media. Government respondents saw the benefits of this transformation and supported it, for example by facilitating the issuance and renewal of permits, enhancing coordination and enabling the continuity of projects implemented through virtual meetings. For support organizations, teleconferencing, e-learning and remote work arrangements were some of the measures implemented. However, the shift to digital also caused disadvantages, especially in rural areas where there are limited infrastructure, as well as lower quality and internet broadband coverage and electricity coverage, which did not allow for digital solutions to be put in place or be accessible and beneficial to everyone. The limitation in using and benefiting from digital solutions implemented was also seen for those whose primary activities rely on physical presence such as harvesting, planting or field trainings.

Results from the survey seem to indicate that private stakeholders as well as BioTrade-related respondents **starting to implement new sustainable strategies and practices** were also more likely to experience positive impacts from the pandemic. This was seen particularly for companies implementing sustainable business models and practices beyond their own organization and along the value chain they operate in. Additionally, BioTrade-related respondents who stated securing their supply chains as a response to the pandemic also saw positive impacts from the pandemic. This contrast with their non-BioTrade counterparts, for which securing supply chains did not correlate at all with any positive impacts from the pandemic.

The recommendations that emerged from the survey and this study are as follows:

Recommendation 1: Improve access to and availability of government support.

- Governments have a key role to play by providing support to stakeholders to tackle the negative impacts of external shocks such as the COVID-19 pandemic. Moreover, government should also foster an enabling policy environment that supports them. Therefore, it is crucial that government support is formulated and implemented considering the characteristics of biodiversity-based stakeholders for them to be more resilient, competitive and able to capture economic and market opportunities for sustainable products and services.
- Special attention should be made by governments to target the needs and circumstances of biodiversity-based stakeholders, especially those of small and microenterprises and local communities when formulating and implementing support measures, either for the post-COVID 19 recovery phase and/or any future external shock. These relate not only to financial measures, but also, for example, to measures that enhance their capacity to adapt their business to digital technologies, implement sustainable practices, as well as to support them in accessing markets with a growing demand for sustainable, healthy, ethical and local products and services.

[23] It is not possible to establish a certain causal relation between these two aspects but the consistency of the correlation as well as the difference in magnitude between the variables, seems to suggest that there is, indeed, a relation.

- Support measures should also provide assistance to all biodiversity-based value chain actors, such as those that create or strengthen the network of support organizations that can assist biodiversity-based businesses.
- Further efforts are also needed to enable biodiversity-based stakeholders to be aware of and access those measures. For example, conducting capacity-building activities or developing special programmes to facilitate applications by the target group, as well as using a variety of channels to disseminate available measures (e.g. radio, social media, WhatsApp, networks, etc).
- A database could be created to document the aggregated solutions and government measures that have been implemented by respondents to cope with or benefit from the pandemic. This will also encourage and facilitate the sharing of knowledge and experiences among all relevant actors and sectors. The information shared must consider the confidentiality and anonymity of the survey participants, thus, before sharing any specific information, it would be consulted and agreed with the relevant respondents.

Recommendation 2: Support private sector stakeholders in accessing markets emerging from the pandemic and to generate a sustainable economic transformation

- The pandemic brought into light the relationship between the health of our planet with human health and our economies. Our lifestyles have shifted as well as consumers' awareness and behaviour in favour of more sustainable, healthy, ethical and locally produced/sourced products and services. For example, the results of a survey conducted by the IBM Institute for Business Value with over 18,000 consumers in 28 countries showed that nearly 60 per cent of the respondents were willing to change their shopping habits to reduce environmental impact (Haller et al., 2020). This resulted in increased demand for these products and services, generating market opportunities for biodiversity-based businesses that are implementing sustainable strategies, practices and models, such as BioTrade.
- Governments, in addition to the COVID-19 measures mentioned above, can also provide incentives to private sector stakeholders to transform their operations and supply chains to be more sustainable. These may include financial incentives such as tax exemptions or reductions for sustainable businesses. Additional measures could include building private-public partnerships, fostering biodiversity-friendly labelling and certification, providing market information and developing, promoting and, if possible, providing priority access to capacity-building activities. Supporting B2B and B2C programmes and participation in trade fairs and developing awareness raising campaigns are also potential support needed. This also takes advantage of the positive relationship seen by survey respondents that implemented sustainability efforts and reported positive impacts emerging from the pandemic.
- Resources can also be redirected from those subsidies that are harmful to nature and biodiversity in particular, such as those that foster unsustainable practices, overexploitation of resources, natural forest/land conversion and/or deforestation, among others. Specifically, a percentage of these harmful subsidies can be redirected to stakeholders that implement sustainability considerations into their practices, strategies and models from the amount spent by governments for fossil fuel subsidies (US$423 billion; Kurukulasuriya and Gray, 2021), for harmful fish subsidies (US$ 35 billion; UNCTAD, 2020c) and of the total annual support given to agriculture producers worldwide that may be harmful to nature and people and are price distorting (around US$469 billion; United Nations, 2021).
- Strengthening or creating a network of support organizations that can provide the services needed by private stakeholders to access international markets is also important. For example, private sector actors need to comply with all the requirements from their target export markets and in some cases research institutions or accredited quality laboratories can provide this support, e.g. by developing documentation such as material safety data sheets or even taxonomy identification of species. Other services needed to capture the growing market opportunities can be provided by governments or businesses associated organizations (e.g. chamber of commerce or export associations) such as matchmaking, liaising with potential buyers or market-information.
- Foster collaboration among all stakeholders to achieve a common goal or address common needs and develop strategic documents (e.g. sectoral or value chain strategies and actions plans). This work can be led by a facilitator or coordinator (from government or support organization) that brings all actors together and provides a neutral space for dialogue. For instance, working on a sector or value chain approach and

strengthening the collaboration among different stakeholders (e.g. SMEs, Micro-SMEs and/or communities, governments, academia, etc) working with a specific product or region, can have many benefits. It may create economies of scale and reduce costs, leverage resources to common needs and goals, increase their negotiation power and enable them to access or even develop joint programmes.

Recommendation 3: Support biodiversity-based stakeholders, particularly SMEs and Micro-SMES and rural communities in developing and/or implementing digital solutions

- The capacity to implement and give access to digital solutions is an important factor for companies to operate in a post-pandemic era. Many businesses are not accustomed to operating digitally, nor do they have the infrastructure, equipment or resources to implement their digital transformation, increasing the gap between those who are digitally adept and those who are not. Hence, in order *to leave no one behind*, efforts are needed to ensure that technology and equipment and/or financial resources are available in addition to capacity-building programmes that enhance the skills of the target beneficiaries to implement the digital solutions.
- Governments, for example, can provide financial aid, leverage specific digital solutions or platforms and create virtual tools that provide the services needed to a broad number of stakeholders (e.g. as shown in the example of PromPerú in Box 2) as well as for developing capacity-building programmes for the target group to know how to use these technologies and services offered. Supporting organizations can also foster these actions, particularly related to capacity-building programmes.
- Considering the needs and special circumstances of the target beneficiaries, the use of digital solutions that can help to enhance their operations and target common goals and/or needs. For instance, jointly accessing online sales channels (e.g. WhatsApp, Facebook) or online sales platforms (e.g. available at national, regional or international level) can potentially provide them with opportunities to reach new markets and clients. These actions can be led by government and/or support organizations in a coordinated and inclusive manner.

Recommendation 4: Foster the implementation of diversification strategies

- The pandemic has also shown the importance of implementing diversification strategies to become resilient to economic and environmental shocks. For example, in diversifying a country's economy through developing and trading new products and services derived sustainably from its own biodiversity. For private sector stakeholders this can be seen as diversification of their products and services portfolio, target markets and/or suppliers.
- Nevertheless, to develop such strategies, not all stakeholders have access to the required information needed to develop a business plan, assess their unique selling proposition (USP), and also think strategically, map out options with their cost/benefit and risk analysis, define new strategies and implement business decisions that can help them to design and implement diversification strategies. This is also seen for actors involved in the production and trade of biodiversity-based products and services, particularly to those that are not necessarily known outside a regional or domestic market.
- Trade promotion organizations, import promotion programmes or organizations, business and civil society associations or networks, experts and others can support these biodiversity-based stakeholders by providing market intelligence, for instance related to the target market or the new products or services to be developed, as well as technical assistance and capacity-building programmes. The digital transformation can also provide strategies to diversify a business operation, for instance by accessing new online sales or distribution channels.
- To facilitate the development and implementation of diversification strategies, creating or strengthening the network of business support organizations and enhancing an entrepreneur culture can be fostered by governments, academia, civil society and other support organizations. Particularly relevant would be to channel business developers and incubators, impact and investment hubs and networks, among others, to target the specific needs of biodiversity-based stakeholders.

Recommendation 5: Conduct regular updates and follow-ups to the responses

- Conducting follow-up survey(s), focusing for instance on a particular set of questions and target audience, could provide an overview of how the responses from the different stakeholders have evolved from 28 February 2021, hence the second year of the pandemic. This will also provide a comparison as well as guidance on how to improve and address the specific needs and seize the opportunities emerging for biodiversity-based stakeholders. In particular, it will enable the analysis of how stakeholders have been coping with the pandemic, what have been the most useful and common government support measures needed and obtained, the solutions implemented and how the impacts vary across the different institutional stakeholders and regions. All this would be useful to develop more targeted and efficient government support.

Through this report, UNCTAD hopes to contribute to the discussion surrounding the COVID-19 pandemic, especially on the needs faced by biodiversity-based stakeholders. UNCTAD also hopes to provide recommendations to biodiversity-based actors to become more resilient to such shocks in the future. The pandemic and its economic consequences may have lasting consequences including to biodiversity-based stakeholders. It is therefore crucial that actions need to be coordinated and aligned so that no one is left behind and that they support the implementation of UNCTAD's Bridgetown Covenant, in particular, the references which mentions that biodiversity loss is a key challenge for sustainable development. UNCTAD, and particularly the BioTrade Initiative, can continue developing and implementing effective and sustainable approaches in collaboration with relevant organizations, which contribute to the transformational changes that is needed.

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Annex 1 – Sample countries by development status

Developing countries

1. Angola*
2. Antigua and Barbuda‡
3. Argentina
4. Barbados‡
5. Bhutan*†
6. Bolivia (Plurinational State of)†
7. Brazil
8. Burundi*†
9. Cameroon
10. Colombia
11. Costa Rica
12. Cuba‡
13. Ecuador
14. Ethiopia*†
15. Ghana
16. Guinea*
17. India
18. Indonesia
19. Jordan
20. Kenya
21. Kuwait
22. Lao People's Democratic Republic*†
23. Lebanon
24. Madagascar*
25. Malawi*†
26. Malaysia
27. Mexico
28. Mozambique*
29. Myanmar*
30. Namibia
31. Nepal*†
32. Pakistan
33. Panama
34. Peru
35. Philippines
36. Rwanda*†
37. Saint Lucia‡
38. Saint Vincent and the Grenadines‡
39. Sao Tome and Principe*‡
40. Seychelles‡
41. Somalia*
42. South Africa
43. Sri Lanka
44. Tuvalu*‡
45. Uganda*†
46. United Arab Emirates
47. United Republic of Tanzania*
48. Vanuatu‡
49. Venezuela (Bolivarian Republic of)
50. Viet Nam
51. Zambia*†
52. Zimbabwe†

Developed countries

1. Belgium
2. Canada
3. France
4. Germany
5. Italy
6. Netherlands
7. Romania
8. Spain
9. Switzerland
10. United Kingdom of Great Britain and Northern Ireland
11. United States of America

Transition economy

1. Georgia

* Least developed country (LDC)

†Landlocked developing country (LLDC)

‡ Small island developing State (SIDS

Annex 2 – Sample countries by region

Africa

1. Angola*
2. Burundi*†
3. Cameroon
4. Ethiopia*†
5. Ghana
6. Guinea*
7. Kenya
8. Madagascar*
9. Malawi*†
10. Mozambique*
11. Namibia
12. Rwanda*†
13. Sao Tome and Principe*‡
14. Seychelles‡
15. Somalia*
16. South Africa
17. Uganda*†
18. United Republic of Tanzania*
19. Zambia*†
20. Zimbabwe†

Americas

1. Antigua and Barbuda‡
2. Argentina
3. Barbados‡
4. Bolivia (Plurinational State of)†
5. Brazil
6. Canada
7. Colombia
8. Costa Rica
9. Cuba‡
10. Ecuador
11. Mexico
12. Panama
13. Peru
14. Saint Lucia‡
15. Saint Vincent and the Grenadines‡
16. United States of America
17. Venezuela (Bolivarian Republic of)

Asia

1. Bhutan*†
2. Georgia
3. India
4. Indonesia
5. Jordan
6. Kuwait
7. Lao People's Democratic Republic*†
8. Lebanon
9. Malaysia
10. Myanmar*
11. Nepal*†
12. Pakistan
13. Philippines
14. Sri Lanka
15. United Arab Emirates
16. Viet Nam

Europe

1. Belgium
2. France
3. Germany
4. Italy
5. Netherlands
6. Romania
7. Spain
8. Switzerland
9. United Kingdom of Great Britain and Northern Ireland

Oceania

1. Tuvalu*‡
2. Vanuatu‡

* Least developed country (LDC)

†Landlocked developing country (LLDC)

‡ Small island developing State (SIDS)

Annex 3 – English version of the survey questionnaire circulated to participants

The survey questionnaire that forms the base for this study was circulated in four languages to maximise its reach: English, French, Spanish and Portuguese. The English version is presented below.

The survey questionnaire was divided into five sections on focusing on different aspects of the respondent's experience of the pandemic. The first two sections are identical independently of the institutional grouping the respondent was from. Sections 3 to 5 contain different questions depending on whether the respondent came from the private sector, the government, support organizations[24] or was an individual expert, and are therefore presented separately below.

1. Section 1 – *Introduction and screening question* contains a brief disclaimer and asks the respondent whether they or their organization are active in a biodiversity-related sector or activity, a necessary requirement to participate to the survey. Only respondents stating they were involved were allowed to continue to section 2.
2. Section 2 – *Respondents' details* contains personal details of the respondent, of their knowledge of BioTrade, their sector as well as the type of organization they are employed in. This last question defined what institutional grouping they would be categorized in for the scope of this study, and which set of questions they would thus be presented with for sections 3 to 5.
3. Section 3 – *Impact of the COVID-19 pandemic* tries to quantify the impact – both positive and negative – the pandemic had on the respondent's organization, in terms of type of impact, extent and duration.
4. Section 4 – *Response to the COVID-19 pandemic* relates to the actions taken by respondents and their organizations to counteract and adapt to the circumstances brought by the pandemic. The questions in this section can be loosely divided into those relating to the opportunities created by the pandemic, those on the solutions implemented to navigate the pandemic and those related to government support measures.
5. Section 5 – *Additional information on respondent's organization* concludes by collecting some generic information on the size, gender balance and – in the case of private sector respondents – of the experience in trade and certification of the respondent's organization.

The following pages present the survey questionnaire in five parts: part a) includes sections 1 and 2, which are common to all respondents; part b) presents sections 3 to 5 as received by private sector respondents; part c) presents sections 3 to 5 as received by government respondents; part d) by support organization respondents; and part d) by individual experts.

[24] Support organizations include academic and research institutions, business support organizations, NGOs and international organizations.

a) Sections 1-2 – Common to all respondents

SECTION	QUESTION	POSSIBLE ANSWERS
Section 1: Introduction and screening question	Background Biodiversity is the variety of life on Earth. Biodiversity-based products have a biological origin (flora, fauna, and other species), while biodiversity-based services depend on ecosystems and biodiversity (e.g., nature-based tourism, pollination, and water provision). Goods produced or derived from minerals, ores, and metals (e.g., sands, petroleum, and natural gas) are not considered biodiversity-based; therefore, they are outside the scope of this survey. Survey results will be featured in a study being prepared by UNCTAD. The study will identify the key challenges and opportunities posed by the COVID-19 pandemic on biodiversity-based sectors, as well as best practices from different actors involved directly or indirectly in the trade of biodiversity-based products and services, including BioTrade. All documents and information prepared in connection with this survey will present only aggregated results. No specific information on individual respondents, their organizations or their responses will be published or disseminated. Any reference to your organization and its activities will be done only with your prior written permission by email or letter. By participating in this survey, you accept that the information you provide will be used by UNCTAD in its work on the “Implications of COVID-19 for biodiversity-based products and services, including BioTrade”. This survey is conducted under the "Global BioTrade Programme: Linking Trade, Biodiversity and Sustainable Development", with the financial support of the Swiss State Secretariat for Economic Affairs SECO. For information on the programme, visit unctad.org/project/global-biotrade-facilitation-programme-linking-trade-biodiversity-and-sustainable. We gratefully appreciate your participation in this survey until 31 January 2021. Should you require further information please do not hesitate to contact Ms. Lorena Jaramillo and Mr. Mario Jales at UNCTAD’s BioTrade Initiative: biotrade@unctad.org. Interested in the work of the BioTrade Initiative? Please visit www.biotrade.org and follow us on Twitter: twitter.com/BioTradeGroup Facebook: facebook.com/BioTradeGroup LinkedIn: linkedin.com/in/biotradegroup	

	Thank you very much for your collaboration.	
	1. Are you or your organization involved in the collection, production, processing, distribution, commercialization, purchase, certification, support, or study of biodiversity-based products and/or services? *	1. Yes, biodiversity-based products and/or services are the primary focus of our activities 2. Yes, but biodiversity-based products and/or services are not the primary focus of our activities 3. No, we do not work with biodiversity-based products and services
Section 2: Respondent's details	Given name *	Open ended
	Surname *	Open ended
	Gender *	1. Female 2. Male 3. Other 4. Prefer not to say
	Email address *	Open ended
	Name of the organization *	Open ended
	Country where the organization is located *	Open ended
	Are you or your organization implementing or supporting the implementation of sustainable practices that promote the conservation and sustainable use of biodiversity and the distribution of the benefits generated? *	1. Yes 2. No 3. Do not know 4. Not applicable
	2. Do you know what BioTrade is? *	1. Yes 2. No

	3. Is your organization implementing or supporting the implementation of the BioTrade Principles and Criteria? *	1. Yes 2. No 3. Do not know 4. Not applicable
	4. Main sector of activity * (if more than one, please select all that apply)	1. Flavours and fragrances 2. Food and beverage 3. Forestry, wood, pulp, and products thereof 4. Forestry-based carbon credit activities (for example, REDD+) 5. Handicrafts 6. Leather, skins, and products made thereof 7. Natural fibres, textiles and products made thereof 8. Ornamental flora and fauna 9. Personal care (e.g., cosmetics) 10. Pharmaceuticals (except phytopharma) 11. Phytopharma 12. Renewable energy of a biological origin (e.g., biofuels) 13. Tourism (e.g., ecotourism, nature-based birdwatching, scuba diving, etc.) Other _____
	5. Type of organization * (if more than one, please select the most important activity)	1. Private sector (e.g., producer, collector, fisher, enterprise, etc.) 2. Government 3. Certification body 4. Non-governmental organization (NGO) 5. International organization 6. Academic or research institution 7. Individual expert

b) Sections 3-5 – Private sector respondents

Section 3: Impact of the COVID-19 pandemic	The questions in this section of the survey refer exclusively to your organization's operations related to biodiversity-based products and services.	
	6. In which stage(s) of the value chain is your organization involved? * (if more than one, please select all that apply)	1. Collection, hunting or fishing 2. Production 3. Processing (e.g., ingredients) 4. Manufacturing (e.g., consumer products) 5. Distribution 6. Sale or export: business-to-business (B2B) 7. Sale or export: business-to-consumer (B2C) 8. Purchase or import 9. Travel agent (only if related to tourism) 10. Tour operator 11. Transportation (only if related to tourism) 12. Accommodation (only if related to tourism) 13. Food services, including restaurants (only if related to tourism) 14. Other_____
	7. Has the COVID-19 pandemic affected your organization's operations (compared with the period from March to December 2019)?	1. No 2. Yes, in a positive way 3. Yes, in a negative way 4. Do not know
	8. Was this effect temporary over time?	1. Temporary 2. Sustained over time 3. Not affected 4. Do not know

	9. If your organization's operations were negatively affected by the COVID-19 pandemic, please indicate the extent of this impact.	1. Very significant, leading to bankruptcy 2. Significant, leading to serious difficulties 3. Moderate 4. Mild 5. Do not know 6. Not applicable 7. Other_____
	10. How were your organization's revenues affected by the COVID-19 pandemic (compared with the period between March and December 2019)?	1. Increased by 50% or more 2. Increased by 10% or more but less than 50% 3. Increased by less than 10% 4. Remained the same as before 5. Decreased by less than 10% 6. Decreased by 10% or more but less than 50% 7. Decreased by 50% or more
	11. Please indicate if your organization has experienced any of the following impacts from the COVID-19 pandemic (select all that apply)	1. Shutdown imposed by the government 2. Financial resources or cash-flow shortage 3. Labour shortage (e.g., due to lockdown, illness, care of family members, restricted movement, etc.) 4. Disruption of supply chains 5. Disruption of logistics and transport operations 6. Disruption of services from business support organizations or certification bodies 7. Disruption of administrative services provided by the government, or creation of new administrative procedures 8. Difficulty in accessing and developing new markets 9. Difficulty in complying with the measures enforced to respond to the pandemic 10. Difficulty or delays in acquiring relevant permits or similar 11. Decrease of sales in the national market 12. Decrease in exports 13. Increase in sales in the national market

		14. Increase in exports 15. Increased access to new business opportunities (e.g., accessing new markets or selling new products) 16. None 17. Do not know 18. Other_____
	12. Was your primary business activity included in the Government's list of "essential activities" and therefore excepted from some of the mandatory isolation and social distancing requirements?	1. Yes 2. No 3. Do not know 4. Not applicable
Section 4: Response to the COVID-19 pandemic	The questions in this section of the survey refer exclusively to your organization's operations related to biodiversity-based products and services.	
	13. What actions has your organization taken in response to the COVID-19 pandemic? (select all that apply)	1. Reduced number of employees or working hours 2. Implemented remote working arrangements 3. Implemented health and safety measures 4. Secured financial resources (e.g., savings, borrowing, negotiating payments with banks and suppliers, etc.) 5. Temporary closing of business 6. Postponed or cancelled investments 7. Reduced production of goods and services 8. Increased production of goods and services 9. Diversified or created products to address new demand 10. Increased, diversified or changed distribution or sales channels (e.g., delivery services, take-out, e-commerce, etc.) 11. Secured current supply chains 12. Started sourcing from new suppliers 13. Started implementing sustainable business models and practices 14. Established new partnerships or formed associations 15. None 16. Do not know 17. Other _____

	14. Have your organization's sustainability efforts changed in response to the COVID-19 pandemic? (select all that apply)	1. Yes, we have enhanced sustainability efforts within our organization 2. Yes, we have enhanced sustainability efforts within our supply chain 3. Yes, we have decreased sustainability efforts within our organization 4. Yes, we have decreased sustainability efforts within our supply chains 5. No, sustainability efforts within our organization have remained the same 6. No, sustainability efforts within our supply chains have remained the same 7. Do not know 8. Not applicable 9. Other _____
	15. Which online solutions has your organization introduced or upgraded in response to the COVID-19 pandemic? (select all that apply)	1. E-commerce (own website, Facebook, WhatsApp, etc.) 2. E-payment or mobile money 3. E-learning 4. Remote work arrangements 5. Teleconferencing with external partners 6. Teleconferencing within the organization 7. Improved internet broadband 8. None 9. Do not know 10. Not applicable 11. Other _____

	16. Through which channels did you experience the highest revenue growth (compared with the period between March and December 2019)? (select a maximum of 2 options)	1. Own company e-commerce website 2. Third-party online marketplace 3. Facebook 4. WhatsApp 5. Other social media and online marketing 6. Online classified ads 7. Telephone channels (calls, SMS, USSD) 8. Traditional channels (non-digital) 9. None 10. Do not know 11. Not applicable 12. Other _____
	17. If your organization faced difficulties when switching to the digital space (e.g. e-commerce, e-payment, e-learning, etc.), please describe	Open ended
	18. Has your organization benefitted from government support programmes related to the COVID-19 pandemic? (select all that apply)	1. Financial incentives and liquidity support (e.g., grants, cash benefits, subsidies, low-interest loans, etc.) 2. In-kind support (e.g., expertise, remote technical assistance, etc.) 3. Matchmaking or similar initiatives to connect buyers and suppliers 4. Deferral of social security payments or other labour costs 5. Tax relief measures (e.g., tax reductions or exemptions) 6. Temporary reduction or elimination of import tariffs 7. Temporary reduction or elimination of export tariffs 8. Promotion of your product or service (with the goal of stimulating demand) 9. Improved internet broadband quality 10. Reduced internet broadband cost 11. Improved postal or delivery services 12. None, not aware of any government support related to the COVID-19 pandemic 13. None, we have not applied to government support related to the COVID-19 pandemic

		14. None, it has been difficult to benefit from government support related to the COVID-19 pandemic 15. Not applicable 16. Do not know 17. Other_____
	19. What types of government support are most needed right now by your organization to respond to the COVID-19 pandemic? (select a maximum of 3 options)	1. Financial incentives and liquidity support (e.g., grants, cash benefits, subsidies, low-interest loans, etc.) 2. In-kind support (e.g., expertise, remote technical assistance, etc.) 3. Matchmaking or similar initiatives to connect buyers and suppliers 4. Deferral of social security payments or other labour costs 5. Tax relief measures (e.g., tax reductions or exemptions) 6. Temporary reduction or elimination of import tariffs 7. Temporary reduction or elimination of export tariffs 8. Promotion of your product or service (with the goal of stimulating demand) 9. Improved internet broadband quality 10. Reduced internet broadband cost 11. Improved postal or delivery services 12. None 13. Not applicable 14. Do not know 15. Other_____
	20. Which new opportunities have been created for your organization by the COVID-19 pandemic? (select all that apply)	1. Increased demand for products and services that are perceived as sustainable 2. Increased demand for products and services that are perceived as healthy 3. Increased demand for products and services that are perceived as ethical 4. Increased demand for products and services that are perceived as local 5. Increased efficiency due to the adoption or upgrading of digital solutions

		6. None 7. Do not know 8. Not applicable 9. Other_____
	21. How is your organization exploring or benefiting from the opportunities identified in the previous question? Please describe	Open ended
	22. Which strategies adopted by your organization have been the most successful in coping with the COVID-19 pandemic? Please describe.	Open ended
	23. Which strategies adopted by your organization have not been successful in coping with the COVID-19 pandemic? Please describe.	Open ended
	24. Please provide any other information related to the COVID-19 pandemic that you consider relevant your organization, your community, and/or BioTrade.	Open ended
Section 5: Additional information on respondent's organization	25. Approximate number of full-time employees	1. 0 2. Between 1 and 10 3. Between 11 and 50 4. Between 51 and 100 5. Between 101 and 200 6. Between 201 and 500 7. 501 or more 8. Do not know
	26. Share of women in the total number of employees	1. Most employees are women 2. Most employees are men

		3. Equally distributed between women and men 4. Do not know
	27. What is your organization's trade experience	1. Exporting only 2. Importing only 3. Both exporting and importing 4. No international experience, we only work at the national market 5. Do not know 6. Other_____
	28. What share of your organization's revenues is derived from international trade?	1. 0% 2. More than 0% but less than 10% 3. More than 10% but less than 25% 4. More than 25% but less than 50% 5. More than 50% 6. Do not know
	29. Does your organization have a certification or meet a voluntary standard?	1. No, and we are not planning to obtain a certification or meet a voluntary standard 2. Not yet, but we are planning to obtain a certification or meet a voluntary standard in the short to medium term 3. Not yet, but we are in the process of being certified or meeting a voluntary standard 4. Yes, we have at least one certification and/or meet at least one voluntary standard 5. Do not know
	30. If your organization has certifications or meets voluntary standards, please list them.	Open ended

c) Sections 3-5 – Government respondents

Section 3: Impact of the COVID-19 pandemic	The questions in this section of the survey refer exclusively to your organization's operations related to biodiversity-based products and services.	
	6. This question was not asked to respondents from the government sector	
	7. Has the COVID-19 pandemic affected your organization's operations (compared with the period from March to December 2019)?	1. No 2. Yes, in a positive way 3. Yes, in a negative way 4. Do not know
	8. Was this effect temporary over time?	1. Temporary 2. Sustained over time 3. Not affected 4. Do not know
	9. If your organization's operations were negatively affected by the COVID-19 pandemic, please indicate the extent of this impact	1. Very significant, leading to bankruptcy 2. Significant, leading to serious difficulties 3. Moderate 4. Mild 5. Do not know 6. Not applicable 7. Other_____
	10. This question was not asked to respondents from the government sector	

	11. Please indicate if your organization has experienced any of the following impacts from the COVID-19 pandemic (select all that apply)	1. Shutdown imposed by the government 2. Shortage of financial resources 3. Labour shortage (e.g., due to lockdown, illness, care of family members, restricted movement, etc.) 4. Disruption of logistics and transport operations 5. Disruption of administrative services provided, or creation of new administrative procedures 6. Reduced budget/investment 7. Limited implementation of activities on the ground (e.g., trainings, field visits, etc.) 8. Limited access to external expertise 9. None 10. Do not know 11. Other_____
	12. This question was not asked to respondents from the government sector	
Section 4: Response to the COVID-19 pandemic	The questions in this section of the survey refer exclusively to your organization's operations related to biodiversity-based products and services.	
	13. What actions has your organization taken in response to the COVID-19 pandemic? (select all that apply)	1. Reduced number of employees or working hours 2. Implemented remote working arrangements 3. Implemented health and safety measures 4. Adopted or upgraded online solutions (e.g., teleconferencing, e-learning, etc.) 5. Increased public awareness campaigns 6. Diversified or created products or lines of work 7. Established new partnerships 8. Dedicated more time to desk research 9. Initiated or upgraded fundraising initiatives 10. None 11. Do not know 12. Other _____

	14. This question was not asked to respondents from the government sector	
	15. Which online solutions has your organization introduced or upgraded in response to the COVID-19 pandemic? (select all that apply)	1. Teleconferencing with beneficiaries or other organizations 2. Teleconferencing within the organization 3. Remote working arrangements 4. Upgraded services delivered remotely (e.g., certifications, e-permits, or other digital administrative procedures) 5. E-learning 6. Improved internet broadband 7. None 8. Do not know 9. Other _____
	16. This question was not asked to respondents from the government sector	
	17. If your organization faced difficulties when switching to the digital space (e.g. e-commerce, e-payment, e-learning, etc.), please describe	Open ended
	18. Has the government provided the private sector any of the following types of support so that it can better cope with the COVID-19 pandemic? (select all that apply)	1. Financial incentives and liquidity support (e.g., grants, cash benefits, subsidies, low-interest loans, etc.) 2. In-kind support (e.g., expertise, remote technical assistance, etc.) 3. Matchmaking or similar initiatives to connect buyers and suppliers 4. Tax relief measures (e.g., tax reductions or exemptions) 5. Temporary reduction or elimination of import tariffs 6. Temporary reduction or elimination of export tariffs 7. Deferral of social security payments or other labour costs 8. Promotion of sustainable biodiversity-based products or services (with the goal of stimulating demand)

		9. Improved internet broadband quality 10. Reduced internet broadband cost 11. Improved postal or delivery services 12. None 13. Not applicable 14. Do not know 15. Other_____
	19. This question was not asked to respondents from the government sector	
	20. This question was not asked to respondents from the government sector	
	21. This question was not asked to respondents from the government sector	
	22. Which strategies have been the most successful in coping with the COVID-19 pandemic within your organization or in relation to your beneficiaries? Please describe	Open ended
	23. Which strategies have not been successful in coping with the COVID-19 pandemic within your organization or in relation to your beneficiaries? Please describe	Open ended
	24. Please provide any other information related to the COVID-19 pandemic that you consider relevant to your organization, your community, and/or BioTrade.	Open ended
Section 5: Additional information on respondent's organization	25. This question was not asked to respondents from the government sector	
	26. Share of women in total number of employees	1. Most employees are women 2. Most employees are men

		3. Equally distributed between women and men 4. Do not know
	27. This question was not asked to respondents from the government sector	
	28. This question was not asked to respondents from the government sector	
	29. This question was not asked to respondents from the government sector	
	30. This question was not asked to respondents from the government sector	

d) Sections 3-5 – Support organization respondents

Section 3: Impact of the COVID-19 pandemic	The questions in this section of the survey refer exclusively to your organization's operations related to biodiversity-based products and services.	
	6. This question was not asked to respondents from support organizations	
	7. Has the COVID-19 pandemic affected your organization's operations (compared with the period between March and December 2019)?	1. No 2. Yes, in a positive way 3. Yes, in a negative way 4. Do not know
	8. Was this effect temporary over time?	5. Temporary 6. Sustained over time 7. Not affected 8. Do not know
	9. Has the COVID-19 pandemic affected your organization in any of the following ways? (select the most relevant options – up to 4)	1. Very significant, leading to bankruptcy 2. Significant, leading to serious difficulties 3. Moderate 4. Mild 5. Do not know 6. Not applicable 7. Other_____
	10. This question was not asked to respondents from support organizations	

	11. Please indicate if your organization has experienced any of the following impacts from the COVID-19 pandemic (select all that apply)	1. Shutdown imposed by the government 2. Labour shortage (e.g., due to lockdown, illness, care of family members, restricted movement, etc.) 3. Disruption of logistics and transport operations 4. Disruption of administrative services provided, or creation of new administrative procedures 5. Reduced budget/investment 6. Limited implementation of activities on the ground (e.g., trainings, field visits, etc.) 7. Limited access to external expertise 8. None 9. Do not know 10. Other_____
	12. This question was not asked to respondents from support organizations	
Section 4: Response to the COVID-19 pandemic	The questions in this section of the survey refer exclusively to your organization's operations related to biodiversity-based products and services.	
	13. What actions has your organization taken in response to the COVID-19 pandemic? (select all that apply)	1. Reduced number of employees or working hours 2. Implemented remote working arrangements 3. Implemented health and safety measures 4. Adopted or upgraded online solutions (e.g., teleconferencing, e-learning, etc.) 5. Increased public awareness campaigns 6. Diversified or created products or lines of work 7. Established new partnerships 8. Dedicated more time to desk research 9. Initiated or upgraded fundraising initiatives 10. None

		11. Do not know 12. Other _____
	14. This question was not asked to respondents from support organizations	
	15. Which online solutions has your organization introduced or upgraded in response to the COVID-19 pandemic? (select all that apply)	1. Teleconferencing with partners and beneficiaries 2. Teleconferencing within the organization 3. Remote working arrangements 4. Upgraded services delivered remotely 5. E-learning 6. Improved internet broadband 7. None 8. Do not know 9. Other _____
	16. This question was not asked to respondents from support organizations	
	17. If your organization faced difficulties when switching to the digital space (e.g., remote work arrangements, e-learning, etc.), please describe them	Open ended
	18. Has your organization benefitted from government support programmes related to the COVID-19 pandemic? (select all that apply	1. Financial incentives and liquidity support (e.g., grants, cash benefits, subsidies, low-interest loans, etc.) 2. In-kind support (e.g., expertise, remote technical assistance, etc.) 3. Matchmaking or similar initiatives to connect your organization with beneficiaries, donors, or others 4. Tax relief measures (e.g., reduced, postponed or exempted taxes) 5. Deferral of social security payments or other labour costs 6. Improved internet broadband quality 7. Reduced internet broadband cost 8. Improved postal or delivery services

		9. None, we are not aware of any government support related to the COVID-19 pandemic 10. None, it has been difficult to benefit from government support related to the COVID-19 pandemic 11. None, we have not applied to government support related to the COVID-19 pandemic 12. Not applicable 13. Do not know 14. Other_____
	19. What types of government support are most needed right now by your organization to respond to the COVID-19 pandemic? (select a maximum of 3 options)	1. Financial incentives and liquidity support (e.g., grants, cash benefits, subsidies, low-interest loans, etc.) 2. In-kind support (e.g., expertise, remote technical assistance, etc.) 3. Matchmaking or similar initiatives to connect your organization with beneficiaries, donors, or others 4. Tax relief measures (e.g., reduced, postponed or exempted taxes) 5. Deferral of social security payments or other labour costs 6. Improved internet broadband quality 7. Reduced internet broadband cost 8. Improved postal or delivery services 9. None 10. Not applicable 11. Do not know 12. Other_____
	20. This question was not asked to respondents from support organizations	
	21. This question was not asked to respondents from support organizations	

	22. Which strategies have been the most successful in coping with the COVID-19 pandemic within your organization or in relation to your beneficiaries? Please describe.	Open ended
	23. Which strategies have not been successful in coping with the COVID-19 pandemic within your organization or in relation to your beneficiaries? Please describe.	Open ended
	24. Please provide any other information related to the COVID-19 pandemic that you consider relevant to your organization, your community, and/or BioTrade.	Open ended
Section 5: Additional information on respondent's organization	25. This question was not asked to respondents from support organizations	
	26. Share of women in total number of employees	1. Most employees are women 2. Most employees are men 3. Equally distributed between women and men 4. Do not know
	27. This question was not asked to respondents from support organizations	
	28. This question was not asked to respondents from support organizations	
	29. This question was not asked to respondents from support organizations	
	30. This question was not asked to respondents from support organizations	

e) Sections 3-5 – Individual experts

Section 3: Impact of the COVID-19 pandemic	The questions in this section of the survey refer exclusively to your work related to biodiversity-based products and services.	
	6. This question was not asked to individual experts	
	7. Has the COVID-19 pandemic affected your work between March 2020 and now (compared with the period between March and December 2019)?	1. No 2. Yes, in a positive way 3. Yes, in a negative way 4. Do not know
	8. Was this effect temporary or has it been sustained over time (between March 2020 and now)?	1. Temporary 2. Sustained over time 3. Not affected 4. Do not know
	9. If your work was negatively affected by the COVID-19 pandemic, please indicate the extent of this impact.	1. Very significant, forcing you to stop working 2. Significant, leading to serious difficulties in keeping your work operational 3. Moderate 4. Mild 5. Do not know 6. Not applicable
	10. This question was not asked to individual experts	
	11. Please indicate if your organization has experienced any of the following impacts from the COVID-19 pandemic (select all that apply)	1. Shutdown imposed by the government 2. Reduced working hours (e.g., due to lockdown, illness, care of family members, restricted movement, etc.) 3. Disruption of travel and logistics operations

		4. Disruption of administrative services provided by the government, or creation of new administrative procedures 5. Reduced budget/financial resources 6. Cancellation or postponement of consulting contracts 7. Limited implementation of activities on the ground (e.g., trainings, field visits, etc.) 8. Limited access to external expertise 9. None 10. Do not know 11. Other_____
	12. This question was not asked to individual experts	
Section 4: Response to the COVID-19 pandemic	The questions in this section of the survey refer exclusively to your work related to biodiversity-based products and services.	
	13. What actions have you taken in response to the COVID-19 pandemic? (select all that apply)	1. Remote working arrangements 2. Adopted or upgraded online solutions 3. Diversified or created products or lines of work 4. Established new partnerships 5. Dedicated more time to desk research 6. None 7. Other _____
	14. This question was not asked to individual experts	
	15. Which online solutions have you introduced or upgraded in response to the COVID-19 pandemic? (select all that apply)	1. E-commerce (through own website, Facebook, WhatsApp, etc.) 2. Teleconferencing with partners or clients 3. Remote work arrangements 4. Upgraded services delivered remotely 5. E-learning 6. Improved internet broadband 7. None 8. Other _____

	16. This question was not asked to individual experts	
	17. If you faced difficulties when switching to the digital space (e.g. remote work arrangements, e-learning, etc.), please describe them.	Open ended
	18. Have you benefitted from support from government support programmes related to the COVID-19 pandemic? (select all that apply)	1. Financial incentives and liquidity support (e.g., grants, cash benefits, subsidies, low-interest loans, etc.) 2. In-kind support (e.g., expertise, remote technical assistance, etc.) 3. Matchmaking or similar initiatives to connect you with potential clients or partners 4. Tax relief measures (e.g., reduced, postponed or exempted taxes) 5. Deferral of social security payments or other labour costs 6. Improved internet broadband quality 7. Reduced internet broadband cost 8. Improved postal or delivery services 9. None, I am not aware of any government support related to the COVID-19 pandemic 10. None, it has been difficult to benefit from government support related to the COVID-19 pandemic 11. None, I have not applied to government support related to the COVID-19 pandemic 12. Do not know 13. Other_____
	19. What types of government support are most needed right now to respond to the COVID-19 pandemic? (select a maximum of 3 options)	1. Financial incentives and liquidity support (e.g., grants, cash benefits, subsidies, low-interest loans, etc.) 2. In-kind support (e.g., expertise, remote technical assistance, etc.) 3. Matchmaking or similar initiatives to connect you with potential clients or partners 4. Tax relief measures (e.g., reduced, postponed or exempted taxes) 5. Deferral of social security payments or other labour costs 6. Improved internet broadband quality

		7. Reduced internet broadband cost 8. Improved postal or delivery services 9. None 10. Do not know 11. Not applicable 12. Other_____
	20. This question was not asked to individual experts	
	21. This question was not asked to individual experts	
	22. Which strategies have been the most successful in coping with the COVID-19 pandemic within your area of work? Please describe.	Open ended
	23. Which strategies have not been successful in coping with the COVID-19 pandemic within your area of work? Please describe	Open ended
	24. Please provide any other information related to the COVID-19 pandemic that you consider relevant to your area of work, your community and/or BioTrade	Open ended
Section 5: Additional information on respondent's organization	25. This question was not asked to individual experts	
	26. This question was not asked to individual experts	
	27. This question was not asked to individual experts	
	28. This question was not asked to individual experts	

	29. This question was not asked to individual experts	
	30. This question was not asked to individual experts	

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