# Migration, remittances and climate resilience in Tajikistan

Working paper

**Part II**

PRISE
Pathways to resilience in semi-arid economies

Research for climate–resilient futures

# Migration, remittances and climate resilience in Tajikistan

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# Acronyms

| | |
|---|---|
| ASAL | Arid and Semi-Arid Lands |
| CAREC | Regional Environmental Centre for Central Asia |
| CARIAA | Collaborative Adaptation Research Initiative in Africa and Asia |
| CG | Control group |
| GBAO | Gorno-Badakhshan Autonomous Oblast |
| DFID | Department for International Development |
| IDRC | International Development Research Centre |
| PRISE | Pathways to Resilience in Semi-Arid Economies |
| DRS | Districts of Republic Subordination |
| SALs | Semi-arid Lands |
| TG | Target group |
| TJS | Tajik Somoni |
| USD | United States Dollar |
| MTO | Monetary Transfer Offices |

Photo of Tajik mosaic on floor © Viktor Teplov

# Introduction

Over the last decade Tajikistan is gradually recovering from economic recession. The overall dynamics of real GDP growth in recent years was 6–7% (Journal of Trading Economics, 2016). The general growth trend was supported by high productivity in the mining area, growth in agriculture, and an increase in remittances of labor migrants. A significant achievement of Tajikistan over the past 15 years is a significant reduction in widespread poverty, from 81% in 1999 to 36.4% in 2014 and 32% in 2015.

However, despite economic growth, climate change directly affects important sectors of the economy, including hydropower and agriculture, vulnerable population, and gradual climate change with sustained temperature increases has negative consequences for food security and living conditions of the population. The consequences of adverse climatic impacts of the last decade include floods in the Pyanj, Vakhsh, Zeravshan and Kafirnigan river basins, desert occurrence on fertile lands in the southern regions of the country, erosion due to improper irrigation and intensive rainfall, water shortages due to droughts, imposed crop rotations due to heat and freezing. The greatest adverse impacts, however, are felt on rainfed agriculture and pastures.

Although having the smallest share of carbon footprint to the overall composition of greenhouse gas emissions, Tajikistan is the most vulnerable to climate change in comparison to other countries of Eurasia and Eastern Europe (UNFCCC). The country is considered as the one having the lowest adaptive capacity, coupled with a high level of aridity and susceptibility to natural disasters (World Bank, 2015).

To define linkages between remittances and climate change, the Regional Environmental Centre for Central Asia (CAREC) together with the Ministry of Should be in Capital letters of Tajikistan has commissioned a research to study the links between remittances of migrants and climate resilience in arid and semi-arid lands (ASAL). The research is done in the context of the *'Migration, remittances, adaptation and resilience in arid and semi-arid regions of Senegal and Tajikistan'* project – part of the *'Pathways to Resilience in Semi-Arid Economies or PRISE'*. PRISE is a five-year, multi-country research project to accumulate new knowledge on whether economic development in semi-arid regions can be made more equitable and resilient to climate change. PRISE is carried out under the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA), with financial support from the UK Government's Department for International Development (DfID) and the International Development Research Centre (IDRC), Canada.

The overall question of the research is 'How can migrants' remittances be more effectively channeled and reinvested in ways that will make a real impact on people's resilience in semi-arid lands in Senegal and Tajikistan?' Therefore, the research in Tajikistan is composed of several stages, including formulation of the research methodology, desk review, household survey and gender case study. The first part of the Working Paper is based on desk-review and includes an analysis of the existing national policy addressing climate change consequences and regulation of migration. As the analysis shows, the existing socio-economic development programmes need improvements to effectively address climate change issues. This part of the Working Paper is based on the outcomes of the **household survey** and *aims to generate evidence to guide the design and implementation of socio-economic development programmes in Tajikistan*, especially those focused on managing climate-induced risks and promoting climate change adaptation measures.

The Working Paper is structured as follows: ***Section I – Research methodology*** covers research methodology, including overall sample, pilot size etc. showing the differences applied while interviewing the Target and Control groups. This section also explains the limitations faced during the analysis and a brief explanation of how to read and interpret the data analysis deriving from the household survey. ***Section II – Labour migration*** reflects on the labour migrants' profile and types of labour migration, as well as the main causes for labour migration. ***Section III – State of socio-tconomic development*** describes the key development and consumption sectors, such as agriculture and energy, as well as reflects on education profile of labour migrants. ***Section IV – Role of remittances in socio-economic development*** covers income generation and the role of remittances in sustaining livelihoods, the role of budget-holders in sustainable development, as well as the challenges and barriers of labour migration and the flow of remittances. ***Section***

***V – Climate change and role of remittances*** covers climate vulnerability and risks, adapting to climate change, and the role of remittances in addressing climate risks. ***Section VI – Enabling policy environment and social safety nets*** mostly focuses on the governmental support that are needed according to the survey respondents. ***Section VII – Key findings and recommendations*** discusses the main findings of the household survey and puts forward recommendations based on those findings. ***Section VIII – Conclusions*** attempts to address the overarching, as well as specific research questions as per the research methodology.

# I Research methodology

## 1.1 National development strategies and plans

In line with the research methodology, the household survey aims to collect information on the following indicators: (a) Socio-economic profiles of households; (b) Migration and remittances characteristics and patterns; (c) Vulnerability to environment degradation and climate change risks; (d) Current modes of receiving remittances (MTOs, banks, personal delivery, etc.,); (e) Current modes of using remittances; and (f) Potential modes of using remittances for resilience, their relevance and applicability for population. Specific gender-sensitive questions were integrated in the household questionnaires as well.

The survey covered two types of households:

1. *Target group:* households, which have a labour migrant/migrants and regularly receive remittances, and

2. *Control group:* households, which live in the same area as *target groups*, but have no labour migrants and do not receive remittances.

The present Working Paper is built on the outcomes of the household survey that has covered 500 households, including 383 respondents in Target group and 117 in Control group. The planned and actual sample size of the households by regions is as follows:

**Table 1 Household sample**

| Province | Average # of migrants (2012–2014) | % of sample | Sample size *(as per methodology)* | | Sample size *(actual)* | |
|---|---|---|---|---|---|---|
| | | | Target group | Control group[1] | Target group | Control group |
| 1. DRS | 158.846 | 22 | 85 | 26 | 85 | 26 |
| 2. Sughd | 254.904 | 35 | 134 | 40 | 134 | 40 |
| 3. Khatlon | 264.724 | 36 | 138 | 41 | 138 | 43 |
| 4. GBAO | 49.565 | 7 | 27 | 8 | 26 | 8 |
| Total | 728.039 | 100 | 384 (134 female respondents) | 115 (40 female respondents) | 383 (207 female respondents) | 117 (57 female respondents) |
| Comparison of planned vs actual number of respondents | | | 100%, including 35% female | 100%, including 35% female | 99.7%, including 54% female | 102%, including 49% female |

[1] According to the Research methodology, the 'Control group' represents 30% of the 'Target group' in each province.

As it can be seen, the household survey has captured considerably greater number of female respondents under both categories than initially planned in the methodology. The key factor for having a greater number of female respondents under the Target group could be the fact that *the household survey took place in the summer during the typical migration season when male population migrates.*

Geographically, the household survey has covered the pilot sites in Sughd, Khatlon, Districts of Republican Subordination (DRS), and Gorno-Badakhshan Autonomous Oblast (GBAO). The selection of pilot sites was made based on the following criteria:

1. Districts with high vulnerability to climate change according to PPCR, 2016;

2. Districts with high vulnerability to climate change according to IOM, 2012;

3. Districts with the highest number of external migrants (2012–2014).

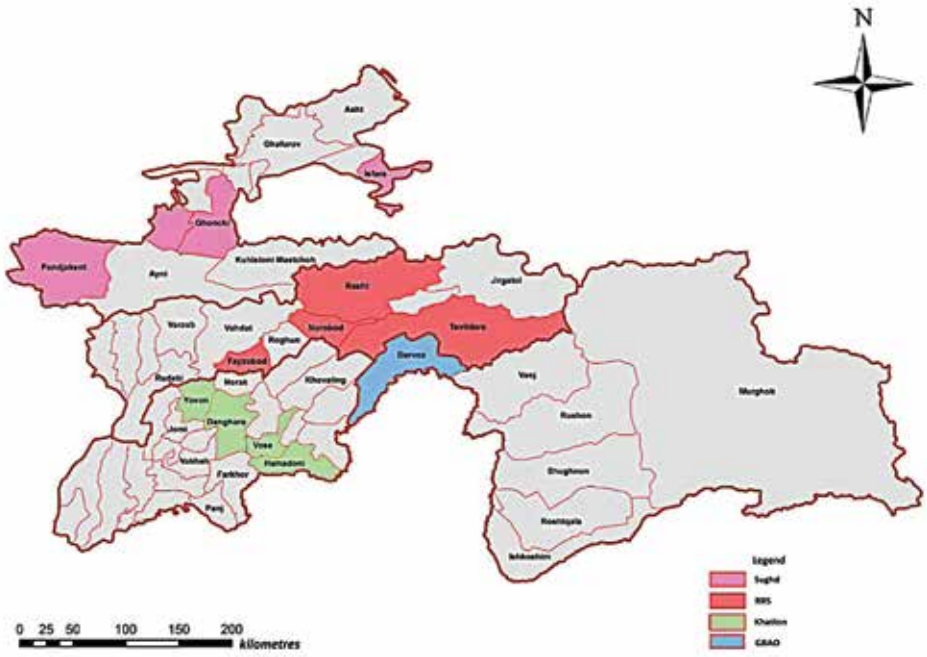
As a result, the following districts were chosen in each region:

**Table 2 Pilot sites**

| **Sughd region** *(4 districts)* | **Khatlon region** *(4 districts)* | **DRS** *(4 districts)* | **GBAO** *(1 district)* |
|---|---|---|---|
| 1. Shahriston<br>2. Ghonchi<br>3. Penjikent<br>4. Isfara | 1. Vose<br>2. Dangara<br>3. Yavan<br>4. Hamadoni | 1. Nurobod<br>2. Rasht<br>3. Faizobod<br>4. Tavildara | 1. Darvoz |

The Map below illustrates the districts covered by the household survey.

**Figure 1 Pilot sites for household survey in Tajikistan**




## 1.2 Research limitations

Data analysis took longer than initially planned mostly due to some data missing and requiring going back to the questionnaires for cross checking. Some questions were not fully completed, probably due to misunderstanding of the questions by the respondents. For instance, the respondents were expected to prioritize the expenditures and investments, however, the answers focus on the actual expenditures and investment preferences.

As a note, quality assurance procedures must be put in place for undertaking similar surveys in the future. Data verification for at least 10% of the questionnaires completed by each surveyor must be carried out so that the surveyor is given the required feedback to ensure he/she is completing the questionnaire as trained and allows minimal errors or blank answers.

## 1.3 Data analysis and interpretation

While reading the data analysis results the following should be taken into account:

1. The Household Survey questionnaires for both the Target (families with labour migrants) and Control (families with no labour migrants) groups include multiple-choice questions. Accordingly, the respondents have provided more than one answer for each question. The questions do not provide space for defining the answers in the order of priorities. Therefore, the analysis of the responses shows a total number of choices of each category by the respondents.

2. Some questions are multi-dimensional and require comparisons of categories under different timeframes. For instance, the question on remittances expenditure requires: (a) comparing different categories of expenditures, and (b) comparing the expenses made before 2014 and since 2015. Under this question, the % of respondents refers to the share of respondents choosing the mentioned expenditure categories and the share of expenditures refers to the average expenditures given by the respondents.

3. The sample size at the regional level is as follows: 26 respondents in GBAO, 85 respondents in Districts of Republican Subordination, 134 respondents in Sughd and 138 respondents in Khatlon. In other terms, the number of respondents in GBAO is four times lower than in Sughd. Therefore, 100% of respondents in GBAO would be equivalent to 25% of respondents in Sughd and only 7% of the entire Target group sample. To provide an accurate picture of the region-specific challenges, the regional totals represent the percentage of responses against the total number of respondents from the region in question and not from the entire sample. For instance, in '32% of respondents, including 53% from Khatlon and 47% from Sughd', 32% refers to the entre sample size (32% out of 383), while 53% represents the share of respondents from Khatlon (53% out of 138 respondents) and 47% represents the share of respondents from Sughd (47% out of 134 respondents). This is done to ensure that the responses from GBAO and to some extent the DRS do not look insignificant in comparison to the responses from Khatlon and Sughd.

The same principle was applied to comparing the Target and Control groups, whereas the number of respondents in the former is more than 3 times as compared to the latter.

# II Labour migration profile

## 2.1 Migration profile

Most of the Target group families have 1 or 2 migrants. Table 3 below shows that around 80% of respondents have 1 or 2 labour migrants in the family. Interestingly, 16% of families with labour migrants have 3–4 labour migrants and 2.6% have more than 5 labour migrants.

**Table 3 Number of labour migrants in respondents' families**

| | Number of labour migrants | | | |
|---|---|---|---|---|
| **Region** | **1–2** | **3–4** | **5+** | **Total** |
| GBAO | 23 | 3 | 0 | 26 |
| Khatlon | 115 | 22 | 1 | 138 |
| DRS | 58 | 20 | 7 | 85 |
| Sughd | 115 | 17 | 2 | 134 |
| Total | 311 | 62 | 10 | 383 |
| | 81.2% | 16.2% | 2.6% | 100.00% |

*Female labour migrants* comprise 6.4% of the total number of labour migrants in families with labour migrants. In Sughd and the DRS, the number of female migrants is the highest, comprising respectively 9% and 8% of the total number of labour migrants from the respective region. In Khatlon region the proportion of female labour migrants is 4%. No female labour migrants were among the respondents in GBAO.

## Table 4 Number of female labour migrants

| | Number of female labour migrants | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1–2 | | 3–4 | | 5+ | | Total | |
| Region | M | F | M | F | M | F | M | F |
| GBAO | 23 | 0 | 3 | 0 | 0 | 0 | 26 | 0 |
| Khatlon | 108 | 5 | 22 | 0 | 1 | 0 | 131 | 5 |
| DRS | 52 | 6 | 19 | 1 | 7 | 0 | 78 | 7 |
| Sughd | 100 | 11 | 16 | 1 | 2 | 0 | 118 | 12 |
| Total: | 283 | 22 | 60 | 2 | 10 | 0 | 353 | 24 |
| | 92.79% | 7.21% | 96.77% | 3.23% | 100.0% | 0.00% | 93.63% | 6.37% |

Photo by Maqsud Gayosov

## 2.2 Reasons of labour migration

The respondents provided a combination of two or more reasons of labour migration. The main reasons include the *lack of income opportunities domestically* (87%) and *unemployment (*69%), degradation of natural resources and disasters (4%) and other reasons (3%). This suggests that income serves as the main contributing reason of labour migration.

Natural disasters and 'other' reasons (2% for both) seem to be insignificant causes of labour migration. This figure provides a good indication of the potential incentives for choosing labour migration as a coping strategy for sustainable livelihoods development. These reasons include: (a) Create a family; (b) Build or renovate the house; (c) Emergency/vital household needs.

### A case study of Tavildara district

Tavildara district is located in the central part of Tajikistan and has the population of 20,453[2]. It's a mountainous district and is therefore highly prone to natural disasters.

In 2012 an earthquake occurred in Tajikistan[3] affecting Rasht, Nurabad and Tavildara districts of Rasht valley. According to the situation reports of the Rapid Emergency Assessment and Coordination Team in Tajikistan, residents of Tavildara district and their livelihoods were affected most. The earthquake has affected a total of 1,591 people, including 1,193 residents (or 75%) of Tavildara district. The residential houses destroyed or damaged in Tavildara district comprise 87% (90 out of 103 houses destroyed in the Rasht valley) and 62% (73 out of 117 houses damaged in Rasht valley), respectively.

In view of the above, when one of the respondents mentioned earthquake as one of the 'other' reasons for migration and he turned out to be from Tavildara, more detailed analyses of responses from this district were carried out. While doing so, it revealed that 12 out of 13 respondents indicating 'other' reasons for migration come from Tavildara district. This sample represents 71% of respondents in the Target group category. While the above sample might not be representative for the present survey, the fact that all of these respondents come from Tavildara district makes a case worth a closer look. Also, these respondents indicated the lack of income (12) and employment (11) as the main reason for labour migration, indicating limited job and income opportunities being available within the district. Among the 'other' reasons, 10 out of 12 respondents have mentioned reasons related to a natural disaster (1) or potentially an impact of a natural disaster (9) which adds to their vulnerability to disaster and climate induced risks. Thus, the more the respondents are vulnerable to disasters and climate induced risks, the more they are inclined to choose labour migration to enhance their livelihoods.

Despite the fact that only 2% of [all 383] respondents have mentioned a natural disaster as the main driver of labour migration, the example of Tavildara district shows that in case of a major disaster, labour migration is likely to become the key coping strategy for those having limited income and employment opportunities to restore and revive their livelihoods.

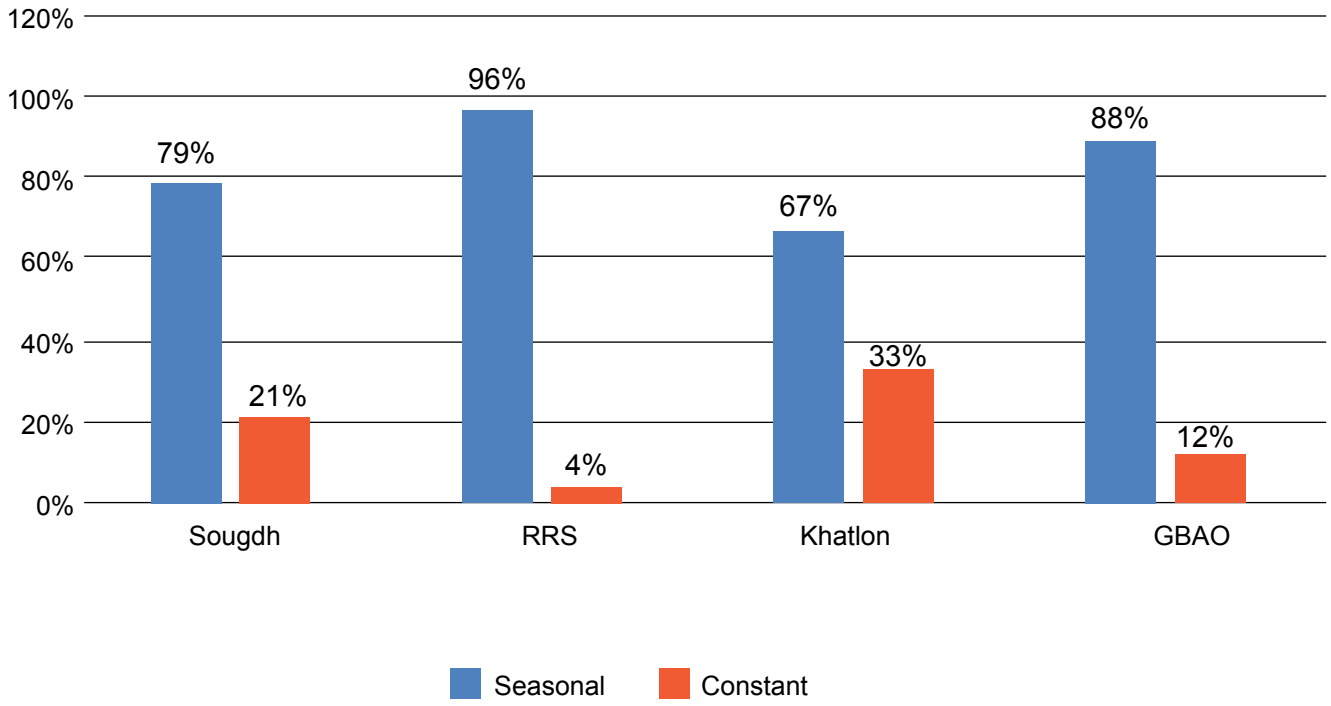
## 2.3 Types of labour migration

The respondents' families mostly go for seasonal (76%), rather than permanent labour migration (21%). Review of the same data by regions shows that seasonal labour migration is the highest among the respondents in the DRS (96%) and lowest in Khatlon (67%). Respectively, these two regions have the lowest and the highest proportion of labour migrants going for permanent labour migration.

2 District Development Programme of Tavildara district for 2013–2017

3 REACT Situation Report #4, 29 May 2012, Available online, Accessed on 5 January 2016

**Figure 2 Seasonal vs permanent labour migration**




Despite the fact that majority of respondents go for seasonal labour migration, only 4% plan to stop labour migration soon, 20% will be on labour migration for next 1–3 years, 16% for 4–5 years, and 37% for 6–10 years. In other words, almost 36% of all respondents plan to stay on labour migration up to 5 years (relevant for short to mid-term planning) and 43% plan to stay for 6 years or more (relevant for long-term planning). Latter category (5+ years) excludes 17% of the respondents which have residence permit and/or citizenship (6%) and those planning to be in permanent labour migration (11%).

The data analysis shows that construction sector is the main employer of Tajik (male and female) labour migrants (68% of respondents), followed by industry (18%), cleaning (8%), business (7%) and other sectors (1%). Taxi and minibus drivers, vehicle technicians, plumbers and loaders are those types of professions that fall in the 'other' category. Data review by gender has revealed a strong division of work/tasks among male and female labour migrants. For instance, the top employment sectors for male labour migrants are construction (71%) and industry (18%). For female, the key employment sectors are cleaning and business (52% and 22% respectively). These sectors are the source of employment for 6% and 4% male respondents, respectively. Although only 23% of the household survey sample are female labour migrants, the income and employment options for male and female labour migrants are still useful for planning and decision-making purposes.

## 2.4 Education

To identify the age profile of labour migrants, respondents in the *Target group* were reviewed from two different angles:

1. Age (captures all respondents aged 20–29 and their level of education)

2. Occupation (captures all respondents claiming to be labour migrants and their level of education)

*Age.* 10% of respondents belong to the 20–29 age group. Out of these respondents, 13 or 33% are labour migrants, including 3 females. All of these respondents have complete secondary education and only two (both male) have higher education. The Tajik labour migration is known as unqualified due to poor Russian language proficiency, lack of specialised skills, as well as lack of health and legal education. In the coming years, this tendency will remain since the majority of young people become labour migrants right after completing the secondary education. This suggests that in the coming years, Tajikistan is likely to continue supplying

unqualified (in education aspect) labour force. Being already prone to income insecurity labour migrants will also become vulnerable to other types of human insecurities due to their inability to offer employable skills demanded in the job market, coupled with lack of language proficiency and legal education.

*Occupation.* About 10% of respondents (37) are labour migrants, including 75% male and 25% female. In summary, the above respondents belong to the following age groups: 33% are aged 20–29, 42% are aged 30–39, 21% are aged 40–49 and 3% are aged 50–59. Two thirds of male respondents (22 out of 33) are aged 30–39, while females mostly fall under the 40–49 age group (5 out of 7). Out of these labour migrants, only 6 have education beyond secondary level, including 2 with vocational training (1 female) and 4 with higher education (all male, including 2 aged 20–29 and 40–49).

Alternative data sources are not comparable with this survey due to differences in research methodology. For instance, according to some research outcomes[4], Tajik labour migrants are predominantly male including 20–25% of the able-bodied population aged 18–40. However, this study refers to official data sources such as Federal Migration Service of the Russian Federation and the World Bank, while the data in the present survey directly derives from the interviews with 10% of respondents and this may not be considered as representative (although still sufficient for defining general age and education profile of labour migrants).

Comparison of respondents' education level in both the Target and Control groups shows that the latter category is less inclined to pursue vocational or higher education:

**Table 5 Education of respondents (comparison)**

| Education: | TG# Total | CG % Total | Difference |
|---|---|---|---|
| Secondary | 59% | 43% | 16.53% |
| Vocational | 17% | 19% | -1.31% |
| Higher | 19% | 38% | -19.14% |
| No formal education | 4% | 0% | 3.92% |
| Total | 100% | 100% | 0% |

The comparison of respondents' education under both categories shows that in the Target group the male respondents are less likely to pursue education after completing secondary school. For comparison, the share of male respondents with vocational and higher education is 52% in the Target group as compared to 65% in the Control group. The share of female respondents with vocational and higher levels of education is significantly lower in the Target group (24%) as compared to the Control group (50%).

**Table 6 Education of respondents (gender segregated)**

| Education: | TG# Male | CG % Male | Difference | TG# Female | CG % Female | Difference |
|---|---|---|---|---|---|---|
| Secondary | 45% | 35% | 9.89% | 71% | 51% | 20.62% |
| Vocational | 24% | 20% | 4.43% | 12% | 18% | -5.95% |
| Higher | 28% | 45% | -17.16% | 12% | 32% | -19.50% |
| No formal education | 3% | 0% | 2.84% | 5% | 0% | 4.83% |
| Total | 100% | 100% | 0% | 100% | 100% | 0% |

The above comparison shows that respondents in the Target group are more inclined to discontinue education after secondary schooling than in the Control group. The female respondents in the Target group seem to have even fewer choices in pursuing vocational or higher levels of education.

[4] Popov D., 'Labour Migration from Tajikistan in Figures' ('Трудовая миграция из Таджикистана в цифрах'), Russian Institute of Strategic Studies, 29.05.2015 available at *http://riss.ru/analitycs/17465/*

The Target group respondents foregone post-secondary education for labour migration. Thus, in terms of education-related aspects of resilience and vulnerability to disaster and climate induced risks the Target group is more vulnerable than the Control group. The above data illustrates that female members of the Target group are even more vulnerable due to having lower education level.

# III State of socio-economic development

## 3.1 Key development and consumption sectors

**Agriculture**

*Agricultural lands/fields*[5]. 67% of respondents said they have agricultural lands. By regions, the percentage of respondents with agricultural lands varies from 50.72% of respondents in Khatlon to 92.94% in the DRS. The majority of respondents with no agricultural lands are based in Khatlon (48.55%) and Sughd (35.07%).

The respondents mainly grow fruits, vegetables, cereals, animal fodder, vinery and gourds (Table 8). Over half of respondents (51.17%) have mentioned growing vegetables, including 35.25% growing vegetables in combination with cereals:

**Table 7 Types of agricultural plants**

| Vegetables | Cereals (wheat, oats, rye, etc.) | Fruits | Beans |
|---|---|---|---|
| 51.17% | 28.98% | 8.36% | 3.66% |

Although the survey does not collect data on the volume of crops grown by the respondents, the fact is that the Control group grows a more diverse variety of crops. This is an indication of their efforts to reduce potential food insecurities they may have in case of natural disasters or as a result of climate change. Of special interest are beans which can serve as the main source of protein intake, while fruits can serve as the source of good income due to higher price and likelihood of being exported out of Tajikistan. However, for the Target group, the main reason of the monocultural plant growing could also be the lack of able-bodied male workers, and therefore the migrants' households do not have the required labour force to pursue diversified agriculture.

The main observation under this section is that the respondents' families (Target group) do not rely on one type of crop and seem to *maximize the use of the available land*, which may be regarded as a household level climate change adaptation measure. At the same time, the extent to which the lands are used sustainably may pose questions given the respondents' poor awareness of climate resilient agricultural practices revealed in the course of data analysis.

The comparison of who works in agricultural lands shows no significant differences between the Target and Control groups. For instance, in both groups, the number of females is higher than the number of males working on the lands. The share of women working on agricultural lands is 46% among the Target group and 42% among the Control group. Yet, the share of children working on the lands is about the same in both groups (22% in TG; and 23% in CG).

*Use of harvest.* According to the survey data, the respondents use the harvest for sale and for family consumption. Out of those respondents who have their own land fields, the biggest share of the harvest is used for their own consumption. Over 70% of respondents said that they use 78% of the total harvest for family needs. Only 30% of the respondents use on average 49% of the harvest for sale. At the regional level, the volume of harvest used for sale comprises 8% in GBAO, 31% in the DRS, 24% in Khatlon and 36% in Sughd.

[5] This section is based on the assumption that agricultural lands also include family land plots. This is because 255 respondents have mentioned that they do not have a [land] field, but at the same time responded to the question on the volume of harvest they use for family consumption, sale or other purposes.

The highest share of respondents using part of their harvest for sale are from Sughd region (63% TG; 65% CG). This is a region-specific trend since Sughd region is known as the industrial centre of Tajikistan, including in fruit and vegetables processing. It is perhaps for this reason that the majority of respondents from Sughd region use most of the harvest for sale. Since the volume of agricultural processing in Sughd region is very high, one can assume that the local farmers gain more income than their peers in Khatlon or in the DRS – the regions where most of the production, rather than processing, takes place. These specifics make the people in Sughd region less prone to food and financial insecurities and associated consequences.

## Energy

*Sources of energy.* The key sources of energy for all respondents, regardless of region, are electricity (99%), firewood (94%), dung (81%) and coal (75%). A very small share in the total energy mix is represented by power generator (3%), solar panels and/or other renewable source of energy (2%). It should be mentioned that solar panels are mostly used in GBAO.

To large extent, the respondents rely on a combination of three (30%) or four (58%) sources of energy. The remaining 12% of respondents rely on one (3%), two (7%) and/or three (2%) sources of energy. The type of energy mix sources at the oblast level is characterized by the rural areas, where people have access to firewood, dung or coal, which is impossible to use in towns. Therefore, those respondents, who mentioned electricity as the only source of energy, live in towns. Electricity is considered as 'green'[6] energy source with minimum impact on the environment and climate change in Tajikistan as it is being generated from the hydro power plants. However, power shortage in the winter period compels inhabitants-to use charcoal and firewood, causing a direct negative impact on the environment.

**Table 8 Key sources of energy**

| **Key sources of energy** | **Target group** *(% of respondents)* | **Control group** *(% of respondents)* |
|---|---|---|
| Electricity | 28 | 28 |
| Coal | 22 | 24 |
| Firewood | 27 | 24 |
| Dung | 23 | 24 |
| Power generator | 0 | 0 |
| Solar panels | 0 | 0 |
| Other | 0 | 0 |
| Total | 100 | 100 |

As for access to energy sources, only 3.39% of respondents said that they do not experience shortage of electricity or heating. Respondents confirming that they experience shortage of electricity and/or lack of heating in general, seasonally, and/or case of disasters, as well as in other instances comprise 96% of the total number of respondents. In general, over four out of 5 respondents (81%) experience electricity shortages and/or lack of heating on seasonal basis e.g. during the winter season.

In Tajikistan, electricity is the cheapest energy source as compared to the other 3 main sources of energy mentioned by the respondents. Firewood is 2nd cheapest source followed by dung, which is produced locally. Coal is the most expensive energy source as compared to the other 3 sources of energy mentioned by the respondents. Thus, both the Target and Control groups use a combination of energy sources with a potential negative impact on the population's well-being.

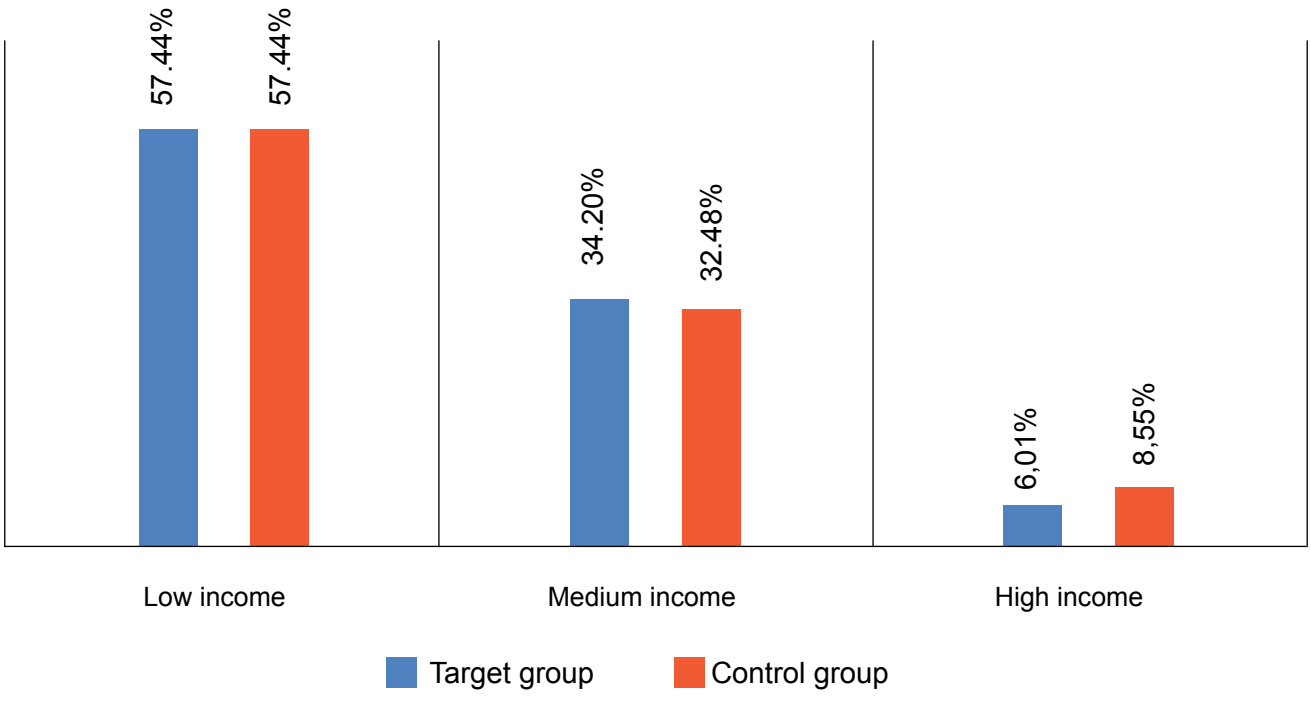
[6] Up to 98% of the energy production is based on hydropower resources in Tajikistan.

# IV Role of remittances in socio-economic development

## 4.1 Income generation

In general, no significant differences in income levels of the families with migrants (TG) and no-migrants (CG) were revealed. The family income level of the majority of respondents (59%) is low and comprises less than 270 Tajik somonies (TJS) per month 7, which is an equivalent to USD 34.30, per person per month. Only 41% of respondents have medium (USD 34.43–63.53) and high-level income (< USD 63.54) per person. Overall, families with migrants (TG) have lower volume of income than families with no migrants (CG) since the former has a slightly greater share of medium income (1,7%), while the latter has a slightly higher share of high-income families (2.54%). This means that **the majority of respondents have an income level that would hardly suffice to cover daily needs.**

**Figure 3 Respondents' income levels**




The respondents' income sources *are not very diverse*. The main differences in income structure of the families with migrants (TG) and no-migrants' include remittances, agriculture, constant salary and pensions for the Target group and salary, agriculture, pensions, and business for the Control group (***Table 8***). Remittances are the main income source for absolute majority of respondents under the Target group (98%). **Because the Target group is heavily dependent on remittances, the share of all other income sources seems to be smaller as compared to the Control group for which remittances do not represent a significant income source.** Otherwise, the number of respondents mentioning each income source and its share in household income follow the same pattern.

The top three sources of income for families with migrants include: (i) remittances, (ii) salary, and (iii) agriculture. More than half of the incomes come in the form of remittances in the Target group, mostly in GBAO and Sughd where respondents claimed that remittances are the major income to sustain their livelihoods. The 2nd and 3rd most frequently mentioned sources of income are salary and agriculture activities (21% and 22% respectively), indicating less dependence on remittances.

7 According to the UN Official Rate of Exchange as of 1 November 2016 (USD1 = TJS 7.8701)

At the same time, quite an interesting picture is seen in the total share of income for the respondents, who don't have migrants and whose income does not depend on remittances. Salary and agriculture are in the top choices and together contribute to 83% of income, while three main sources of incomes in the migrant families contribute to 81%. This fact, unfortunately, articulates that the source of income, although not sufficiently diverse in both types of families, is not at all stable in the case of families with migrants (TG), which are heavily dependent on labour migrants' remittances.

**Table 9 Income sources in % on average**

| Source of income | TG share of income | CG share of income | Difference share of income |
|---|---|---|---|
| Remittances | 38% | 0.00 | 38% |
| Constant salary | 21% | 53% | -32% |
| Agriculture | 22% | 30% | -12% |
| Business | 3% | 7% | -4% |
| Pension | 9% | 5% | 4% |
| Stipend | 5% | 3% | 2% |
| Other | 5% | 2% | 3% |
| Total | 100% | 100% | |

## 4.2 Use of remittances in sustaining livelihoods

The household surveys questions on the use of remittances refer to the *volume of remittances* used for the mentioned expenditure categories.

The most *popular* expenditure categories include 'basic needs' (57% of respondents), health related expenditures (10%), education (9%), wedding (6%) and disaster related activities (3%):

**Table 10 Expenditures (average %)**

| Target group | 1 Basic needs | 2 Health | 3 Education | 4 Wedding | 5 Disaster | 6 Environmental measures | 7 Crops | 8 Ploughing technologies | 9 Innovative irrigation | 10 Business | 11 Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| % of respondents | 57% | 10% | 9% | 6% | 3% | 1% | 2% | 1% | 3% | 2% | 6% |

As will be shown in the following sections, limited income and employment opportunities are the main drivers of labour migration and the Target group is prone to different vulnerabilities, mostly due to the different socio-economic factors, including lower level of education. The socio-economic status of the Target group respondents well explains why 'basic needs' represent the main expenditure category for which 57% of remittances are used on average. This finding is also consistent with the findings of the Tajikistan Panel Household Survey according to which 59,7% of remittances are used for basic family needs[8].

*Weddings.* Weddings in Tajikistan are known as one of the most memorable but at the same time rather costly events in life. Weddings are costly mostly due to the need for cultural compliance that is rather complicated and involves several stages before and after the wedding. The so called *'Kalym' (dowry)* that is given before the wedding is quite costly. At the same time, the peer pressure is so heavy that cultural compliance results in taking big debts and loans at the cost of the house that often is the only property put as a collateral in case of default on repaying the loans. As a result, many families are unable to repay the loans and lose their property. In response to this problem, in 2011, the Government of Tajikistan has introduced a Law on organizing local customs and traditions that regulates the duration of events and the number of guests invited to the family events, including weddings. Although the costs of weddings have significantly reduced after the adoption of the above mentionem Law weddings still represent a major burden on families' budget.

[8] **Tajikistan Household Panel Survey:** Migration, Remittances and the Labor MarketInstitute for East and Southeast European StudiesRegensburg,Institute for East and Southeast European StudiesRegensburg, 2013

As shown above, lack of income is the main driver of labour migration. Hence, if the weddings represent one of the key family expenditure categories, then they are one of the reasons contributing to increased labour migration. This is consistent with IOM study that revealed two main age groups of labour migrants, including those aged 20–29 – the sons who go abroad to earn money for organizing a wedding[9] or associated costs such as building a house before arranging a wedding. Another survey clarifies that those going to labour migration to earn money for weddings represent the poor and also medium income families[10].

*Business.* Despite the fact that labour migrants' families have rather limited income source, they seem not to invest much into business that has a potential to generate additional income and jobs. One of the possible explanations is that the total amount of remittances is so small that it's hardly enough to make savings. Therefore, the focus is made on daily consumption rather than on long-term investments.

Only 9% of respondents on average invest up to 19% of remittances into business activities. These respondents mostly come from Fayzobod (14), Isfara (5), Shahriston (4), Dangara (4), Vose, Yovon, Ghonchi (2 each), Nurobod and Darvoz (1 each). Out of these respondents, only those from Isfara (5), Shahriston (1), Dangara (1) and Vose (1) used remittances for weddings. Hence, investments into weddings and business are not necessarily mutually exclusive. Therefore, other factors seem to be playing a critical role on whether remittances are invested in business or not. These possibly relate to business enabling environment in the districts where respondents invest remittances for business:

**Table 11 Distance to the capital city and regional centres**

| Districts | Distance from capital city (Dushanbe, km) | Distance from regional centre (km) | Regional centre | Trade corridor/ border | Revenue status |
|---|---|---|---|---|---|
| Fayzabod | 50 | - | DRS | Trade corridor 3 | Subsidized district |
| Isfara | 448 | 107 | Khujand, Sughd | Connects with Trade corridor 6 via national road, borders with Kyrgyzstan | Donor district |
| Shahriston | 241 | 100 | Khujand, Sughd | Trade corridor 6 | Subsidized district |
| Dangara | 116 | 106 | Kurgantyube, Khatlon | National road, Railway | Donor |
| Vose | 184 | 172 | Kurgantyube, Khatlon | National road, Railway | Subsidized |
| Yovon | 58 | 88 | Kurgantyube, Khatlon | Railway | Donor district |
| Ghonchi (Devashtich) | 285 | 66 | Khujand, Sughd | n/a | Subsidized district |
| Nurobod | 173 | - | DRS | Trade corridor 3 | Subsidized district |
| Darvoz | 284 | 240 | Khorugh, GBAO | National road, borders with Afghanistan (Border Crossing Point Ruzvai) | Subsidized district |

The above analysis shows that remittances are primarily spent on immediate family needs. To clarify whether the situation would change should the respondents have a greater income, the respondents were asked the following question: *'If theoretically you have 100 000 US dollars, what expenditures would you make and in which proportions?'*

Comparison of the most popular expenses the respondents actually make vs their desired expenditures shows that the top five *popular* 'desired' investment categories are 'basic needs', medical expenses, educational expenses, wedding expenditures and environmental measures. Four out of five expenditure categories are the same as the top four actual expenditures the respondents make:

[9] 'Labour Migration from Tajikistan', IOM and 'Sharq' Scientific Research Centre, 2003

[10] **Tajikistan Household Panel Survey:** Migration, Remittances and the Labor MarketInstitute for East and Southeast European Studies Regensburg, Institute for East and Southeast European StudiesRegensburg, 2013

**Table 12 Comparison of the most popular vs desired expenditure categories, in % on average**

| Expense category | % of actual expenditures | % of desired expenditures | Difference |
|---|---|---|---|
| Basic needs | 57% | 44% | -13% |
| Medical expenses | 10% | 10% | 0% |
| Educational expenses | 9% | 9% | 0% |
| Wedding expenditures | 6% | 9% | +3% |
| Disaster protection (construction) | 3% | 5% | +2% |
| Business | 1% | 2% | +1% |
| Crops | 2% | 2% | 0% |
| Agricultural Ploughing Technologies | 1% | 2% | +1% |
| Innovative Irrigation Technologies | 3% | 1% | -2% |
| Environmental Measures | 2% | 9% | +7% |
| Other | 6% | 7% | +1% |

Notably, 9% of desired investments would go into environmental measurement as compared to 2% currently invested into this category. Other most notable differences include greater investments into wedding and disaster protection.

The above comparison shows that if respondents had greater volume of income, there would not be any significant changes in allocation with exception of 'basic needs' (~-13%) and environmental measurement (~+7%). Although 'basic needs' will remain the most popular expenditure category and the main consumer of the income, in the 'desired' scenario the expenditures for daily needs would reduce by approximately 13%. The 2nd desired investment category represents spending on medical services which remains the same as it is in the actual expenditures. Differences in expenditures related to disaster protection (+2%) and agricultural ploughing technologies (~+1%) are less significant under the two scenarios.

## 4.3 Challenges and barriers towards labour migration opportunities and remittances

Labour migrants covered by the present survey have faced challenges preventing them from duly accessing employment and income opportunities abroad. The respondents' answers suggest that the changes are caused by a combination of factors, including an economic situation (69.97%), strict labour migration regulations (57.44%) and lack of employment opportunities (31.59%) in the receiving country. Accordingly, the top combination of factors (reasons) mentioned by the respondent represent a combination of one or more factors, namely:

**Table 13 Reasons for changes in volume of remittances**

| Main reasons mentioned by the respondents | Two or more reasons mentioned by the respondents |
|---|---|
| 1. Economic situation – 24.02%<br>2. Lack of jobs in receiving country – 8.62%<br>3. Strict labour migration regulations in receiving country – 12.27% | 1. Economic situation and labour migration regulations – 27.15%<br>2. Economic situation, labour migration regulations and lack of jobs in receiving country – 11.23%<br>3. Economic situation and lack of jobs in receiving country – 6.27%<br>4. Labour migration and lack of jobs in receiving country – 4.44% |

The data in Table 14 suggests that *problems in receiving countries are the main cause* of changes in the volume of remittances. Namely, the economic situation in the receiving country is the main reason that has caused changes in the volume of remittances sent by labour migrants. Other contributing factors are strict labour migration regulations and lack of employment. Altogether, these reasons suggest that the

environment for labour migrants in receiving countries is not favourable. This could be linked to recent economic recession in Russia, which, according to different sources, is a destination country for over 85% of Tajik labour migrants.

In addition to the volume of remittances, the respondents also mentioned barriers related to receiving remittances. Limited cash (31%), strict policy requirements (19%), high bank fees (14%) and high transaction costs is critical for every 8th respondent.

One of the explanations could be higher demand for than supply of cash in the local banks. In such instances, the central bank must deliver cash to the local banks. Hence, the distance from Dushanbe – the capital city to the regional centres and then to the most remote district becomes the main contributor of cash deficit. In other words, the further the region or the district is, the more likely the recipients will face barriers in receiving remittances. Moreover, lack of cash availability requires recipients of remittances to visit the bank offices more than once. In the mountainous districts, distance to the bank can significantly add to overheads e.g. transportation costs, which can significantly reduce the actual amount of remittances sent to the recipients. Perhaps this explains that for respondents in mountainous areas (GBAO and DRS), bank fees are not a real barrier as these expenses are not as significant as transportation and other overhead costs they have to make in order to receive the remitted money.

## 4.4 Family budget holders and their role in sustainable development

The number of households where women control the family budget is higher among families that have migrants. The survey finds that the proportion of households where women manage the budget is 49% in the target group, versus 31% in the control group (i.e. not having migrants). The fact that a greater share of women are in charge of the household budget in labour migrants' families is not news. This is one of the social changes resulting from massive labour migration. In the situation when men are out of their place of residence for most of the year, their daily household management functions are delegated to women. The existing evidence suggests that women tend to pay more attention to social issues than men. As this survey shows, women on average spend on basic needs, health and education twice as much as men (2% in TG and 5% in CG). Thus, the more women are in charge of family budget management, the more likely the ***household level investments to health and education would increase.*** In long-term perspective, this will contribute to improved well-being of the family.

But in reality, the above social change is not necessarily a positive development before it actually translates into social acceptance that is often challenging to attain due to women's lack of confidence in taking over the new household management functions. Therefore, building confidence in women is an important step for effective use of remittances and reducing vulnerability of households to climate change and climate induced risks.

# V Climate change and role of remittances

## 5.1 Climate vulnerability and risks

Mudflows and floods, mainly due to heavy rains, are the most common climate phenomenon faced by the respondents in the area of their living (69% and 55% of respondents respectively). Linked to these two categories are floods (14% of respondents) and landslides (8% of respondents). High air temperatures are viewed as a common challenge by 52% of respondents and droughts were mentioned by 29% of respondents ***(Figure 4).*** Segregation of the data by male and female respondents did not reveal any significant differences.

Environmental degradation, caused by various factors, has the greatest impact on the life of rural population as deterioration of natural environment deprives them of their livelihood, forcing them to develop adaptation strategies or at least migrate them temporarily or permanently. If we take into account the fact that rural residents make up a large part of the population of Tajikistan (73%), it is clear that the problems of environmental migration are very relevant for Tajikistan – a mountainous country where snow avalanches, floods and mudflows are causing great damage to the rural population.

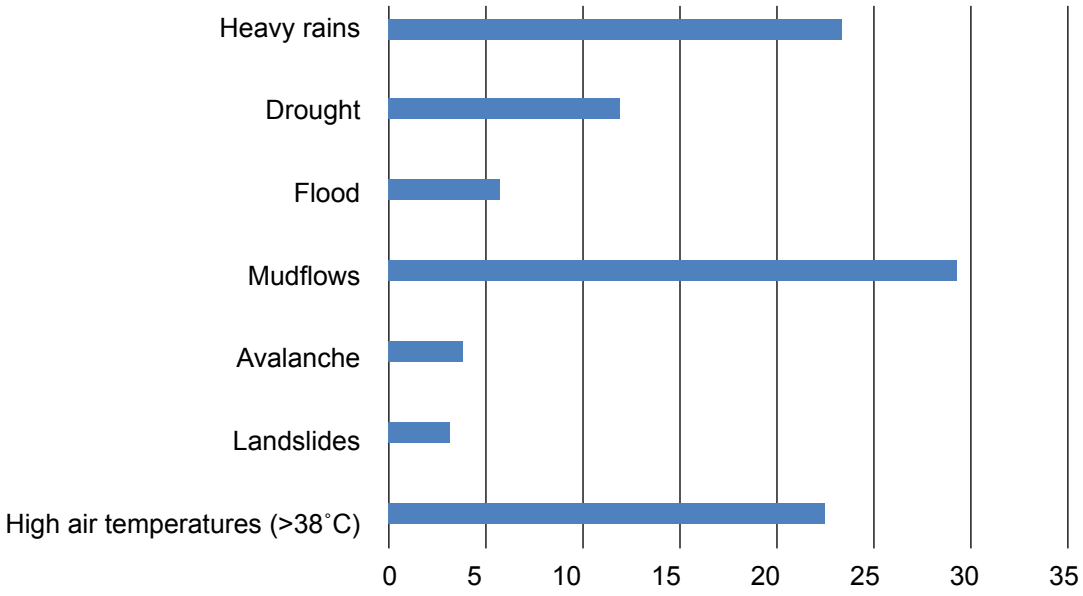
Natural disasters cause a rapid response from the state and society. The Republic of Tajikistan has developed a legislation regulating migration caused by natural disasters, and institutions have been set up to manage it. Annually, the state relocates hundreds of households from the dangerous areas, rendering them assistance and support. Society also helps the people affected by natural disasters in all possible ways.

In recent years politicians and scientists became actively interested in the dynamics of the interrelations between migration and changes in environment (Döös, 1997). It should be recognized that with the great interest in this topic, data on the interaction of environment and migration is remaining scarce. Therefore, more recently, projects were launched to collect empirical data, aimed at studying the impact of environmental changes on decision-making related to migration.

Thus, the European Commission initiated a large-scale international project called 'Environmental changes and scenarios of forced migration (EACH–FOR)', covering 23 countries. In fact, the case study[11] is the first in Tajikistan in the direction of studying population migration associated with environmental degradation. As the results show, despite the existence of various kinds of environmental degradation, the population continues to live in these places. The main reasons for such 'residency' are the presence of a labor migrant in the household, the reluctance to leave the ancestral land on the one hand, and the lack of sufficient financial resources on the other.

This tendency (also mentioned by the respondents of this survey) coincides with the climate impact assessments conducted in the frameworks of thematic climate-related research projects and is also backed up with meteorological observations.

**Figure 4 Climate variability indicators (% of respondents indicated the most common disaster)**




Climate variability and change (such as heavy rains, abnormally high air temperatures) is one of the main challenges towards sustainable livelihoods. The breakdown of responses on impact of disasters on different aspects of respondents' livelihoods shows that mudflows are viewed as the major natural disaster causing a negative impact on infrastructure and agricultural lands and many other aspects of respondents' lives. Heavy rains are the 2nd most frequently mentioned cause. Other findings include:

- Infrastructure objects were, to a large extent, affected by: (a) mudflows (67% of 172 respondents). Roads are most frequent type of infrastructure affected by natural disasters (35%); and (b) heavy rains (28%);

- Mudflows (59% of 172 respondents) and heavy rains (19%) have also had an impact on agricultural lands. Interestingly, the deterioration of agricultural lands is viewed by 93% of respondents due to natural disasters and only 7% mentioned insects or plant diseases;

- 89% (49 out of 57) of respondents view mudflows as the main cause of land degradation;

[11] EACH–FOR Case Study report for the Republic of Tajikistan: https://proyectoambientales.files.wordpress.com/2011/05/csr_tajikistan_090330.pdf

- According to the respondents droughts (45%), mudflows (29%) and extreme temperatures have caused water scarcity (80 respondents);
- Diseases were thought to be caused by high temperature (10 out of 36 respondents) and mudflows (8/36);
- Mudflows (31%) and heavy rains (28%) are viewed as the main causes of crop reduction (108 respondents).

It is evident that climate change impact in the respondents' residential area is drastically high. Low and unstable income coupled with frequency of climate-induced disasters and limited technical capacity and knowledge of the 'abandoned' family members (women, old people and children) make the livelihoods even more vulnerable. However, the finding, which has been emerged in previous chapter on the use of remittances, states that respondents spend only 3% of their remittances to cope with disasters, which is not enough and requires additional finance. The more climate vulnerability and change cause extreme weather events and disasters, the more families with migrants will spend on post-recovery measures.

## 5.2 Adapting to climate change

The research findings show that most of the respondents apply a combination of resource intensive technological practices and low cost, local solutions to adapt to climate change. The analysis shows that in many instances low cost solutions are a preferred option. For example, tree planting is common to 76% of all respondents (73% TG; 86 CG). This is relatively higher (10%) than the share of respondents constructing disaster-related infrastructure (65% TG; 71% CG). Digging wells can also be regarded as a construction measure, however the respondents seem to practice it less often (27% of all respondents; 26% TG; 31% CG) compared to tree planting.

**Table 14 Adaptation measures taken by the respondents**

| Adaptation measures | Constructions for protection from disasters | Specific ploughing technologies for agriculture | Specific types of crops | Specific irrigation system | Digging wells | Planting trees | Other |
|---|---|---|---|---|---|---|---|
| Target group | 65% | 14% | 21% | 3% | 26% | 73% | 1% |
| Control group | 71% | 20% | 21% | 2% | 31% | 86% | 5% |

The review of the types of measures respondents undertake to address climate risks shows that families with migrants implement the above measures less often. This leads to the assumption that the majority of proposed adaptation measures foresee hard manual or machinery work, which the female members or children, left in their households, are unable to apply. Instead, they use the so-called 'light' measures, such as planting trees or small-scaled activities for disaster protection. Latter activity, to large extent, includes building mudflow flumes.

Adaptation measures, which respondents undertake in case of water scarcity and drought, to the most extent include: (i) digging wells (44% in average) and (ii) building water canals (31% TG; 40% CG). The fact that the respondents grow drought resistant plants (30% TG; 38% CG), use winter and spring crops (29% TG; 37% CG) and save rainwater in reservoirs (25% in average for both groups) shows that rural residents are aware of and frequently apply these adaptation practices.

At the oblast level, the most common adaptation practices for agriculture and water management sectors are:

- In GBAO the respondents grow drought resistant plants (65%);
- In Khatlon the common practices include digging wells (57% of respondents), and growing drought resistant plants (41%);
- In the DRS the respondents mostly grow winter and spring crops (45%), and construct water canals (33%);
- In Sughd the respondents most often dig wells (66%) and construct water canals (51%).

**Table 15 Measures during water deficit and droughts**

| Measures in case of water scarcity and droughts | Digging wells | Ameliorative measures such as dragging, deep ploughing etc. | Use drip irrigation | Use suitable fertilizers | Use drought-resistant plants | Construction of water canals | Saving rainwater in reservoirs | Use winter and spring crops |
|---|---|---|---|---|---|---|---|---|
| Target group: | 44.39% | 12.01% | 11.49% | 13.84% | 30.03% | 30.81% | 25.85% | 28.98% |
| Control group: | 45.30% | 13.68% | 12.82% | 18.80% | 38.46% | 40.17% | 25.64% | 36.75% |

The comparative table above shows that the Control group is more advanced in using the variety of measures during the water deficit and drought. A closer look at the differences in adaptation measures among families with migrants and no-migrants indicates that on average 20% more families with no-migrants grow drought resistant plants and winter and spring crops. This is probably due to the fact that families with no migrants have their men at home who also participate in the management of agriculture, while in the families with migrants agriculture work entirely lays on the women's shoulders.

Application of energy efficient practices at the households' level is a recognized adaptation measure country wide. Use of energy saving electrical lamps (92%) seems to be the most common practice among the respondents. Other energy saving practices include double-glazing (35%), use of plastic windows (27%) and house insulation (25%). The remaining 5% is the use power generators. Energy saving measures most common in GBAO include covering the windows with plastic sheets and/or use of energy saving stoves.

At the oblast level, the break-down of energy efficiency measures is provided in Table 17. GBAO seems to be advancing in the use of solar panels (4%) and plastic windows (35%), while Sughd and the DRS diversify their energy efficiency measures with house insulation (up to 54%) and window double glazing (up to 98%) practices.

**Table 16 Use of energy efficient measures at the household level**

| # Energy source | GBAO | Khatlon | DRS | Sughd |
|---|---|---|---|---|
| 1. House insulation | 38% | 7% | 6% | 54% |
| 2. Solar panels | 4% | 1% | 2% | 1% |
| 3. Plastic windows | 35% | 30% | 13% | 31% |
| 4. Double glazing | 23% | 38% | 98% | 35% |
| 5. Energy-saving electrical lamps | 85% | 91% | 98% | 93% |
| 6. Power generator | 4% | 4% | 2% | 7% |

The analysis shows that although the respondents suffer from shortage of electricity and heating (common for 95% of all respondents), they still *tend to apply energy efficient practices. In other words, the respondents effectively use the available energy sources.*

## 5.3 Role of remittances in addressing climate risks

The role of remittances in addressing climate risks is critical for the families with labour migrants. The previous chapter explained that since the households are to the most extent located in climate vulnerable zones, the risk of climate induced disasters and impacts of climate change are quite high. The analysis of expenditures, which is mostly comprised of remittances, shows that household expenditures for environmental protection and climate adaptation measures are:

- Less than 5% of total expenditures for 57% of respondents, including 70% of respondents from Khatlon region;
- 6–10% of expenditures for 31%, including 69% of respondents from GBAO; and
- 11–20% of expenditure for 6% of respondents, including 19% of respondents from GBAO region.

What is specific to GBAO region is that the majority of respondents spend up to 20% on environmental protection. In Khatlon region, the absolute majority spends up to 10%, including 70% of respondents paying for environmental protection and climate adaptation measures. In Sughd region, the expenditure trends resemble the situation in Khatlon. Over 63% of respondents from Sughd spend less than 5%. Likewise, in the DRS expenditures on environmental protection and climate change comprise up to 10% for 77% of respondents.

To summarize the above, respondents spending least on environmental protection come from Khatlon region (70% spend less than 5%) and those spending most come from GBAO and the DRS, 44% and 29% spending from 5 to 20% for environmental protection respectively. This finding is region-specific since GBAO and the DRS are highly mountainous regions as compared to Khatlon and Sughd which include a combination of mountainous and plains. Another observation is that female respondents tend to mention slightly lower (max 5% difference) figures/expenditures than male respondents, which is linked to the lower income status of female respondents.

**Table 17 Volume of expenditures for environmental protection and adaptation measures**

| Volume of expenditures for environmental protection / adaptation | Target group | | Control group | |
|---|---|---|---|---|
| | # | % | # | % |
| Less than 5% | 217 | 57% | 66 | 56% |
| 5–10% | 120 | 31% | 40 | 34% |
| 10–20% | 24 | 6% | 5 | 4% |
| 20%+ | 4 | 1% | 1 | 1% |

The table above shows that both the Target and Control group spend about the same share of their income on measures to address environmental challenges they face. However, respondents in the Target group have lower level of education, as well as lower volume and unstable income due to high dependence on remittances. Insufficient income coupled with lower level of agricultural expertise make planning and implementing the above measures unaffordable to the Target group.

The actual volume of remittances invested into environment and climate change-related activities is not consistent with the amount of funding required to tackle these challenges. This means that the investments are either fragmented and not coordinated within a community[12] or insignificant as compared to the actual investments required for strengthening the respondents' resilience to environmental challenges and climate induced risks. To add to this investments to a large extent are made for hard interventions (procurement of raw materials, infrastructure activities, installation of equipment, etc.), while the role of the soft interventions ('know-how', innovative technologies and skills) seems to be undermined.

In comparison with the actual situation of expenditures on environmental protection and climate adaptation measures, the households would on average invest 16% more into agriculture activities, including agricultural ploughing technologies and innovative irrigation systems, crops and environmental protection measures (~48% of actual expenditures vs 55% of desired investments). The break-down of the 'desired' investments also reveals that greater share of investments is made in agricultural ploughing technologies (+4,82%), innovative irrigation technologies (+3,85%), disaster protection (+3%) and crops (+0,6%). The only exception applies to the environmental measures which would reduce by approximately 5%. The present research does not allow exploring further as to why would respondents invest less into environmental measures. This should be explored in more details to better understand the respondents' preferences while making investment related decisions.

[12] For instance, for greater return of investments, cleaning of an irrigation or a drainage channel that serves more than one household/community requires coordination with/contributions from all users

# VI Enabling policy environment and social safety nets

## 6.1 Governmental support

Majority of respondents (72%) stated that the government provides support for sustainable livelihoods, including environmental protection and coping with disasters. The categories of governmental support include: (a) relocation (93%), (b) funding (73%), (c) new place of living (45%), and (d) provision of agricultural lands (37%).

At the oblast level, the situation is as follows:

- In GBAO region, every 2nd respondent (54%) mentioned that the government does not provide support for protection from environmental problems. As mentioned in the preceding section, one of the reasons could be that these respondents live in remote and/or 'hard to access' areas. This communication factor directly affects the volume and frequency of support the respondents from such communities receive from the government. Those confirming government support mentioned relocation (42%) and new place for living and working (35%) as the most common types of measure provided by the government;

- In Khatlon and the DRS regions, the government measures include relocation (57% and 56% respectively), as well as new places for living and working (33% and 20% respectively), and financial support (33% and 21% respectively);

- In Sughd the number of respondents receiving financial support from the government is the highest (46%). The same applies to other support measures provided by the government.

Respondents' answers suggest that the government provides a combination of two or more measures with relocation and funding support being of more or less the same proportion (33% and 31% respectively).

At the same time support from public and private institutions can also be differentiated. For example, considerable number of respondents mentioned that they need: (a) credit programs with favorable terms and conditions (highest in Sughd – 31%; lowest in GBAO – 12%); (b) subsidies (highest in DRS – 47%; lowest in Khatlon and Sughd, 23% each); and (c) special support for disaster prevention infrastructure (highest in Sughd – 39%; lowest in the DRS – 5%). The share of respondents mentioning (d) insurance programs for harvest and crops comprises 8%, including highest share in GBAO (19%), followed by Sughd (15%), the DRS (6%) and Khatlon (1%).

The social safety is guaranteed by the Laws of the Republic of Tajikistan about social standards, which covers the following areas of social protection: (a) payment for labour; (b) employment and unemployment support; (c) pensions and social insurance; (d) healthcare; and (e) education, etc. In fact, this Law does not make any difference in providing support to the labour migrants or no-migrant families. However, the analysis above showed that the type of support may vary from cash and no-cash (relocation, agricultural lands) and capture different type of users.

# VII Key findings and recommendations

*Labour migration.* Lack of income serves as the main incentive for opting for labour migration, while employment is only a secondary reason. As the case of Tavildara districts showed, disasters can also spur labour migration. Over half of respondents are planning to continue with labour migration for more than 5 years. This clearly shows that in the mid-term perspective the number of labour migrants from Tajikistan is likely to increase if no alternative employment and self-employment options are made available in Tajikistan.

The above analysis on labour migration trends calls for the following policy actions:

- Availability of jobs in the local market is not sufficient for retention of labour force and/or effectiveness of job-creation or labour intensive programmes. Decent payments and benefits for the target population groups, especially youth should also be taken into account while designing such programmes;

- A major disaster can spur labour migration in disaster prone areas, as the case of Tavildara shows. Since Tajikistan's area is composed of 93% of mountains and is rich in water resources, the country is prone to natural disasters, especially earthquakes and floods. Plus, in Central Asia, Tajikistan is the country considered to be the most vulnerable to climate change and climate induced risks. Therefore, due consideration for disaster and climate change aspects in planning and decision making is key for sustainable livelihoods development, particularly in areas with high rates of unemployment or limited income opportunities.

- The survey has also revealed that there is a clear division of labour between male and female labour migrants. Since there is a migration regulation put in place by the government, pre-departure orientation or vocational training courses targeting labour migrants could be customized for male and female migrants depending on their employment options in the destination country.

*Occupation.* Families with no labour migrants are employed in the country more than families with labour migrants. This is probably, due to the fact that families with migrants being unemployed started to migrate out of the country initially. For instance, the number of unemployed respondents is almost twice as high in families with labour migrants (38%) than in families with no labour migrants (22%). Likewise, the share of unemployed female in the families with labour migrants is 2 times higher as compared to males. In families with labour migrants the number of unemployed female respondents is 1.5 times higher than that in families with no labour migrants (48% vs 28%).

Higher rate of unemployment among families with labour migrants adds another layer of vulnerability to disaster and climate induced risks.

*Education.* In families with labour migrants males forego post-secondary education for labour migration. The general trend is that families with labour migrants are less inclined to pursue vocational or higher education than families with no labour migrants (19% and 38%, respectively). The gender-segregated analysis shows that in families with labour migrants women are less likely to obtain higher education (12%) than male (28%). Likewise, education level of women in families with labour migrants is considerably lower than in families with no labour migrants. Lack of proper education in families with labour migrants, especially females, makes them more vulnerable to disaster and climate induced risks.

Because labour migration is likely to increase in the near future and because labour migrants forego higher education for the sake of accessing jobs and income [via labour migration], the awareness and knowledge on environmental issues, as well as disasters and climate-induced risks must become part of the school curriculum. This will ensure targeted assistance for and greater outreach to the most vulnerable community segments.

*Family budget and income.* According to the official data, the minimal salary in Tajikistan during 10 months of 2016 was equal to TJS 400 per month, while the average salary reached 932.48 TJS[13] (equivalent to USD 50.82 and USD 118.48[14] respectively) per month. The average pension for the same period was TJS 268 (equivalent to USD 34.05) per month. The average monthly per capita expenditure for the same period was TJS 259.68 (equivalent to USD 33) per month.

[13] Ministry of Economic Development and Trade of the Republic of Tajikistan

[14] According to the UN Official Rate of Exchange as of 1st November 2016 (USD1=TJS7.8701)

Around 57% of respondents in both families (with and without labour migrants) have a per capita monthly income of less than TJS270 or USD 34.30. This means that the ***majority of respondents have an income level that would hardly suffice to cover daily needs.***

Likewise, the sources of income are not very diverse, neither are they stable, especially for families that are dependent on remittances. Remittances are the main income source for the majority of *families with labour migrants.* Irregular and limited number of income sources adds another layer of vulnerability in families with labour migrants to the ***food, environmental and other types of human insecurities*** arising from the limited and irregular income.

Accordingly, there is an urgent need to **diversify income sources of families with labour migrants.** The fact that the greater share of families with labour migrants are willing to make additional investments into business holds a promise. Here support interventions need to focus on effective family budget planning and management with the focus on savings and/or business-oriented investments. Yet, instead of bringing in knowledge in unknown development fields efforts should be made to enhancing the existing knowledge base within the target communities.

*Investments.* The main finding is that if respondents in the target group had greater volume of income, they would invest more into business, agricultural and ploughing technologies, innovative irrigation technologies and disaster protection. As the present survey shows, women are inclined to make greater expenditures on health and education. The main barrier in this case, is that women are not confident in budget regulation. Thus, the more women know the basic financial management instruments, the more likely the ***household level investments in health and education would increase***.

Photo by Maqsud Gayosov

To ensure that more investments into business have higher returns there is the need for a detailed review of family income structure vs expenditures. This will help the families to better understand the potential losses [in financial terms] they incur due to poor knowledge in planning and decision making. As part of this exercise, the families need to understand their vulnerability to different risks and receive guidance in shifting from day-to-day ad-hoc expenditures to evidence-based and informed investment decisions.

*Role of women in budget management.* The share of female respondents in charge of family budget in families with labour migrants comprises half of respondents and this is 18% higher than in the families with no labour migrants. In the situation when men are out of their place of residence for most of the year, their daily household management functions are delegated to women. This change cannot be considered as a positive development before it actually translates into social acceptance that is often challenging to attain. Therefore, **confidence-building measures for women** are essential for effective use of remittances and reducing vulnerability of households to climate change and climate induced risks.

*Role of remittances in environmental protection and climate change.* The actual volume of remittances invested into environment and climate change related activities are either fragmented or not coordinated within a community[15]. To add to this, investments to a large extent are made in hard interventions (procurement of raw materials, infrastructure activities, installation of equipment, etc), while the role of soft interventions ('know-how', innovative technologies and skills) seems to be undermined.

The above findings call for the following policy actions:

- There is a need for a greater focus on 'soft' interventions for disaster and climate induced risks management while planning remittances expenditures/investments. This requires rising local awareness on existing knowledge and expertise for sustainable farming among migrants' families. Essential element of this work would be to focus more on 'home-grown' and 'low-cost' innovative solutions. While tree planting is very common among the respondents, understanding of innovative irrigation measures or specific agricultural technologies is rather limited. In this regard, agricultural extension services by local experts could be a potential option for supporting less experienced farmers. Yet, incentives should be sought for advanced farmers for them to be willing to share their expertise and knowledge.

- There is a need for coordinated resource (both in-kind such as manual labour and in-cash) mobilization by the communities for more complex approach to address environmental issues. For this to take place there is already communities of migrants, who know each other. In this regard, the trusted and influential leaders could help communities to understand the benefits of joint community, rather than household level measures for adaptation to climate change.

*Government support for environmental protection.* The level of government's responsiveness varies from region to region. For instance, the Sughd government seems to be most responsive to population needs. This can be explained by the fact that Sughd region is 'wealthier' in terms of revenues and larger taxation base and therefore the regional government can afford rendering both in-kind and financial support.

Another finding is that families with labour migrants seem to be generally benefitting less from government support than do families with no labour migrants. This trend applies to in-kind support such as relocation, new agricultural lands and new place for living. In terms of in-cash support families with labour migrants seem to be benefitting more than those with no migrants.

- Since the actual volume of financial support is unknown and so is the monetary equivalent of in-kind support and the quality of the received agricultural lands, it is difficult to assess which support generates greater returns. The only aspect that is relevant and should be pointed out is that families with labour migrants receive less agricultural land because they are not engaged in agricultural activities as intensively as families with no labour migrants are.

[15] For instance, for greater return of investments, cleaning of an irrigation or a drainage channel that serves more than one household/community requires coordination with/contributions from all users

# VIII Conclusions

### 1. *The current trends of migrant remittances and linkages between receiving and sending countries:*

Over the past few years, labour remittances in Tajikistan have critically reduced in size[16]. One of the main reasons for such decrease in remittances is associated with economic crisis, which was observed in Russian Federation in 2015, the primary destination for Tajik labour migrants. Throughout the household survey families with labour migrants confirmed that economic situation in receiving country is the main barrier to labour migration and remittance inflows. This is also consistent with the existing sources of evidence suggesting that ***economic recession in the Russian Federation – home to 85% of Tajik labour migrants – has a direct impact on the volume of remittances*** sent by labour migrants[17].

### 2. *Extent to which remittances support climate resilient development within key socio-economic sectors in Tajikistan*

The analysis showed that remittances do ***support climate resilient development*** mostly through the investment in disaster related and environmental measures. However, the impact of these investments within agriculture and business development – key socio-economic development sectors – is minimal due to lack of income sources. For families of labour migrants to be more resilient, the income sources must be diversified through re-investing remittances into business or agricultural development. Agricultural activities are the major source of rural economy in Tajikistan. At the same time, agriculture is one of the main sources of income in families with labour migrants. In the face of climate change consequences labour migrants are willing to invest more into agricultural activities such as innovative irrigation systems and agricultural ploughing technologies. In addition, appropriate investments into sustainable development of agriculture (migrants' small business) seems to be an avenue for labour migrants' families to become less dependent on economic crises in receiving countries and for the remittances to become the catalyst of climate resilient development at the local level.

### 3. *Whether migrant remittances help to strengthen the resilience of households and individuals in Tajikistan*

Remittances ***do contribute to strengthening the resilience of households and individuals*** in Tajikistan. However, the use of remittances proved to be ineffective and not sustainable. For instance, with regards to disaster-related expenditures the current allocations are focused on disaster response rather than prevention measures. Likewise, under other relevant expenditure items investments are focused on hard interventions such as small-scale construction activities. Tree planting is very common measure which might have little effect at the household level. For greater community level impact, there is the need for: (a) a joint action of migrants' communities; and (b) an integrated approach with a combined set of hard (infrastructure, etc.) and soft (awareness rising, training, knowledge transfer, etc.) interventions.

### 4. *Whether remittances shape the mechanism of successful social safety nets to ensure the long-term climate-resilient investments*

Labour migrants' remittances are widely recognized as the main contributor to poverty reduction in Tajikistan[18] and overwhelmingly ***contribute to the country's social safety net***. However, mechanisms for using the investments effectively to ensure the long-term climate resilient development are still on the way.

The findings showed that the Government is generally responsive to the population needs and provides a combined set of measures in case of disasters and includes different types of cash-based or no-cash support, varying from region to region. It provides targeted assistance to families with labour migrants meaning that ***remittances do shape the mechanism of social safety nets***. However, there is no support from the government for the migrants' families to get scholarship for education, or to have access to medical assistance in the rural areas, to develop their own business, including agriculture etc.

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16 Agency on statistics of the Republic of Tajikistan: webpage: *http://stat.tj/*

17 *https://news.tj/en/news/tajikistan/economic/20160726/remittance-flows-tajikistan-reportedly-decline-221-percent*

18 *https://www.ids.ac.uk/files/dmfile/Wp388.pdf*


Photo by Anton Timoshenko

### *5. Sustainability of remittances and their impacts on resilience*

In the mid-term perspective the tendency of labour migration will at least remain unchanged or even increase. Thus, remittances will continue playing a key role in addressing the climate-resilient future of families with labour migrants. Therefore, remittances seem to play a key role in sustaining livelihoods, but there is space for more effective use of remittances for a greater contribution to resilience.

There is a tendency among families with labour migrants to spend more on climate resilient measures, as well as for higher education for children and for business development. This tendency can be used as a solid entry point to help families with labour migrants to shift from ad-hoc consumption focused to investment focused spending of remittances. This shift in mentality translated into concrete actions coupled with the government's will to implement the commitments of Addis Ababa Action Agenda[19] to reduce transaction cost of remittances could potentially result in ***sustainability of remittances*** and further enhance their impact on resilience.

The present survey shows that the absolute majority (97%) of families with labour migrants spends up to 57% of remittances on meeting basic family needs and only 9% of families on average allocate 1% of remittances for business. In other countries, such as Zimbabwe, 96% of remittances are used for daily needs, but still remittances are believed to have contributed *'directly or indirectly (through sustained sales for informal traders) in sustaining livelihoods'*[20]**.** Given that families with labour migrants in Tajikistan spend less on 'basic needs' it can be assumed that remittances in Tajikistan have even greater contribution in sustaining livelihoods. Moreover, one third of the families with labour migrants tend to make savings. These savings are largely used to fund other family member's migration or for weddings. In some countries, the propensity of the labour migrants' families to save is estimated to be as high as 40%[21].

[19] The outcome document adopted at the Third Internatinal Conference on Financing for Development (Addis Ababa, Ethiopia, 13–16 July 2015) and endorsed by the General Assembly in its resolution 69/313 of 27 July 2015, available at: http://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf

[20] *https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2119155*

[21] *http://www.red.nrb.org.np/publications/working_papers/NRB_Working_Paper--NRB-WP-04--Apr_2008%3B_Mobilizing_Remittances_for_Productive_Use:_A%20Policy-Oriented_Approach--Bhubanesh_Pant.pdf*

In recognition of the role of remittances in sustainable development, the Sustainable Development Goals adopted by the UN General Assembly in September 2015 include migration related targets such as human trafficking, labour rights, migration governance, and remittances costs[22].

Moreover, the new agenda 2030 recognizes 'the positive contribution of migrants and diaspora [including via remittances] for achieving sustainable development'[23]. The Addis Ababa Action Agenda includes *'specific targets on reducing transaction costs of remittances to 3%'[24].This reduction from the current average of 8% is estimated to result in 'a saving of over $20 billion annually for the migrants and their relatives'[25].* For migrants families this global target can play a key role in reducing the transaction costs and bank charges. This is especially true for the recipients living in remote and mountainous areas such as GBAO for whom transportation means are limited and can be considerably higher than in plain and densely populated areas.

Families with labour migrants live in disaster prone areas and therefore spend considerable amount of remittances on disaster response measures. Here, knowledge of effective prevention measures and collective action would considerably reduce the costs and would result in greater community impact.

### 6. *How can the remittances from migrants be more effectively channeled and re-invested in ways that will make a real impact on people's resilience in semi-arid lands of Tajikistan?*

In summary, in the context of Tajikistan remittances present a great potential for enhancing the resilience of labour migrants' families. Overall, higher education seems to be unaffordable to labour migrants as finding income to meet immediate family needs is found more urgent than pursuing education that is time- and cost intensive. Considering the education gap and the fact that majority of respondents go for seasonal migration, it is worth offering skills development/learning/consulting opportunities during labour migrants break/stay in Tajikistan.

The budget management by women is an opportunity for economic empowerment of labour migrants' wives (left-behind women are not only wives but also a mother, a sister etc. ). However, for this social change to be accepted by the society, confidence-building measures for women, including in budget planning and management are required. In addition, education for men to change their behavior and attitudes towards women managing household finances would be relevant.

At the same time labour migrants' families showed interest to invest more in business and agriculture activities. Since businesses in rural areas are to a large extent agriculture based and while agriculture is one of the most vulnerable sectors to climate change consequences, there is a direct link between effective use of remittances and resilience to climate change. In this regard, the sustainable knowledge-transfer mechanisms to consult and mentor families with labour migrants on business development with due consideration of climate induced risks can lead to resilience to climate change.

Remittances could be used more effectively by promoting joint action of migrants' communities for climate resilient development. Shift from post-disaster response to prevention measures could potentially result in savings for more effective use of remittances, while enabling environment in the form of more affordable credits and loans from financial institutions, where remittances can be used as collateral would expand opportunities for a sustainable use of investments in climate-resilient measures.

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22 *http://www.globalmigrationgroup.org/system/files/Summary%20GMG%20Report_Final_0.pdf*

23 *https://europa.eu/eyd2015/en/icmc-europe/stories/remittances-and-post-2015-summit*

24 Ibid

25 *http://www.globalmigrationgroup.org/system/files/Summary%20GMG%20Report_Final_0.pdf*

# IX Annexes

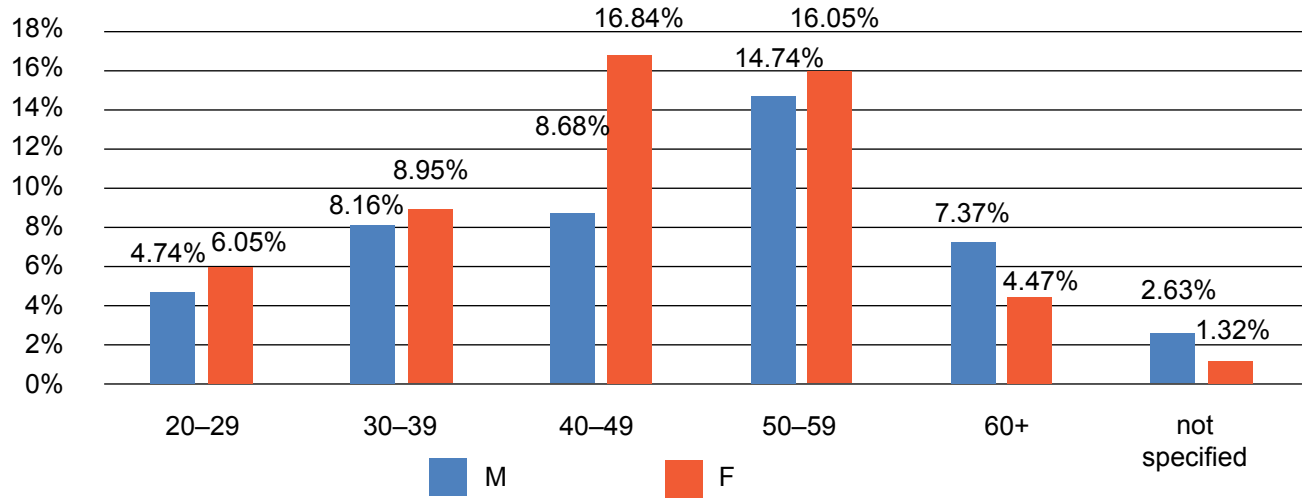
## Annex 1 Respondents profile

### *Households' profile – Target group*

*Age.* Analysis of the household survey data shows that 30.79% of respondents from target groups are aged between 50 and 59, followed by those aged between 40 and 49 (25.53%) and those aged between 30 and 39 (17.11%). Altogether, these 3 age categories (between 30 and 59) represent over two thirds (73.43%) of the total number of respondents. Those aged above 60 represent 11, 84% of the total number of respondents.

The proportion of male and female as compared to the total number of respondents is 46,32% and 53,68% accordingly indicating that the target for female respondents was exceeded by 18%. The top 3 age groups where female represent the majority of respondents are: 40–49 (16,84%), 50–59 (16,05%) and 30–39 (8,95%). Females in these 3 age groups represent 77.94% of all female respondents.

**Figure 5 Distribution of respondents by age in Target group**




*Family members.* The respondents' households are, to a large extent, composed of *six or more family members (68%).* The largest share of families with six or more members is in GBAO (88%), 82% in the DRS and 70% in Khatlon. In Sughd, 55% of respondents have six or more family members. Up to 27% of respondents' families are composed of 4 or 5 members with Sughd showing the highest proportion (39%) and GBAO the lowest (12%). Only 4% of respondents' families have up to three members, including 6% in Sughd, 5% in Khatlon and 1% in the DRS. Notably, 18 respondents (5%) said that they have a family *member with disability* (19 persons with disabilities, including 11 male and 8 female. 9 of them are from Khatlon region, 6 from Sughd, 3 from the DRS and 1 from GBAO).

*Education*[26]*.* 96% of respondents, including 47% male and 53% female, have at least a complete secondary education. Over half of respondents (59%) have only secondary education (35% male and 65% female respondents), followed by 19% of respondents with higher education (66% male and only 34% female) and 17% of respondents, who have undergone vocational training (64% male and 36% female). The remaining 4% of respondents either received incomplete secondary education (1%) or did not specify their level of education (3%). The above data shows that only 1/4 of all female respondents have acquired education beyond secondary school. When it comes to tertiary or higher education the number of females is respectively 1,8 and 2 times lower than the number of male respondents.

[26] This section is based on the assumption that while responding to the question on level of education, the respondents have mentioned the highest level of education acquired rather than one or more levels of education completed by the respondents. This assumption derives from the fact that in Tajikistan one can't obtain a vocational education without at least 9 years of secondary education, neither can't one obtain a higher level of education without completed 11 years of secondary education. Therefore, the analysis of the section on education presents the responses as 'the highest level of education received' rather than 'education' of respondents that the household questionnaire focuses on.

Those aged between 20 and 29, represent 11%, including 46% male and 54% female. Two thirds of these respondents have at least secondary education (67%), one third has a complete (28%) and incomplete (3%) higher education and 3% have vocational education. Data segregated by gender shows the following picture: male respondents have at least secondary education (11) and higher education (6 complete and 1 incomplete higher education). Female respondents have secondary education (15), vocational education (1) and higher education (5). One respondent did not specify her level of education.

*Occupation.* In terms of occupation, over half of respondents are employed or self-employed (57.96%, including 56% male and 44% female). Out of those unemployed (38%), the share of female respondents is twice higher than male (69% and 31% respectively).

**Table 18 Respondents' employment status**

| Category | Total | Male | Female |
|---|---|---|---|
| Employed or self-employed | 57% | 56% | 44% |
| Temporary employed | 1% | 75% | 25% |
| Unemployed | 38% | 31% | 69% |
| Did not specify | 4% | 35% | 65% |

The 'employed' respondents primarily work in state institutions (41%). Every 7th respondent is a labour migrant (15%), every 9th respondent is engaged in farming (11%). Every 10th respondent is a pensioner. About the same share of respondents do unskilled work or are engaged in the private sector (8% and 7% respectively).

**Table 19 Respondents' occupation**

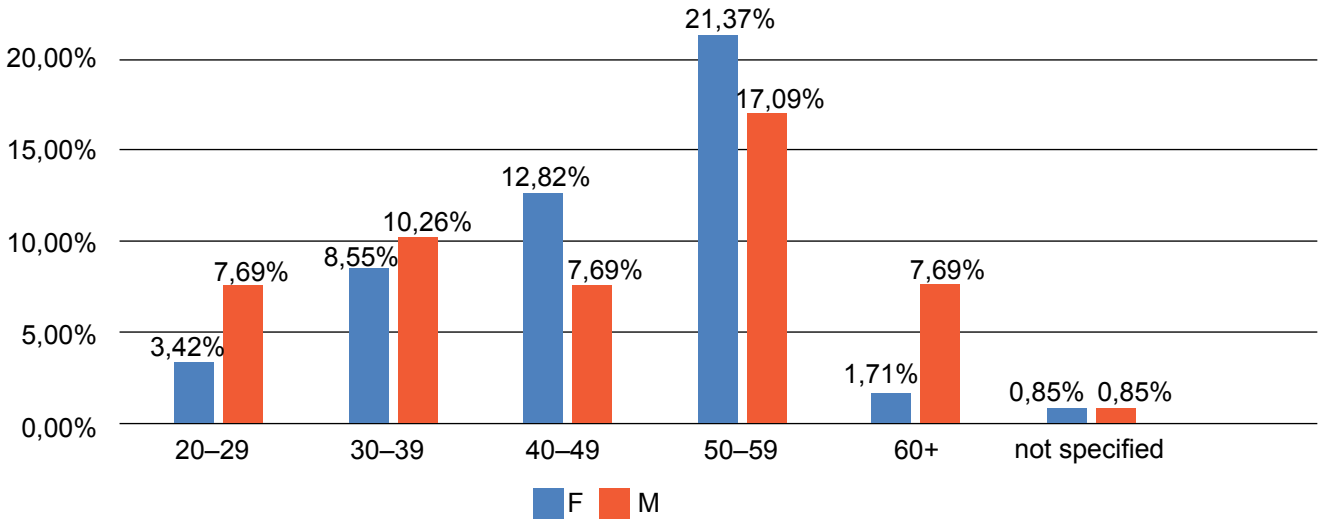
| Category | Total | Male | Female |
|---|---|---|---|
| State institutions | 40.63% | 52% | 48% |
| Labour migrant | 14.73% | 70% | 30% |
| Dehkan farm | 10.71% | 58% | 42% |
| Pensioner | 9.82% | 55% | 45% |
| Unskilled work | 7.59% | 93% | 7% |
| Private sector | 7.14% | 44% | 56% |
| Service sector | 4.02% | 44% | 56% |
| Other categories | 5.36 | 70% | 30% |

### *Households' profile – Control group*

*Age.* Analysis of the household survey data shows that 38% of respondents from control groups are aged between 50 and 59, followed by those aged between 40 and 49 (21%) and those aged between 30 and 39 (19%). Altogether, these 3 age categories (between 30 and 59) represent over two thirds (78%) of the total number of respondents. Those aged above 60 represent 9% of the total number of respondents. The household survey also captured young respondents aged 20–29 (11%).

The proportion of male and female as compared to the total number of respondents is 51% and 49% accordingly.

**Figure 6 Distribution of respondents by age in Control group**




*Family members.* The respondents' households are, to large extent, composed of six or more family members *(65%).* Approximately 32% of respondents' families are composed of 4 or 5. Only 3.42% of respondents' families have up to three members. Notably, 3 respondents from Khatlon said that they have a family *member with disability* (total 9 persons with disabilities, including 4 male and 6 female).

*Education.* The majority of respondents have at least completed secondary education (43%, including 42% male and 58% female respondents), followed by those who have higher education (39%, including 60% male and only 40% female) and have undergone vocational training (19 %, 55% male and 45% female). The above data shows that only every 2nd female respondent has acquired education beyond secondary school.

*Occupation.* In terms of occupation the majority of respondents are employed or self-employed (76%), and 22% are unemployed.

Photo by Svitlana Nikitiyuk

### Table 20 Respondents' employment status

| Category | Total | Male | Female |
|---|---|---|---|
| Employed or self-employed | 75.21% | 56% | 44% |
| Temporary employed | 0.85% | 100% | 0% |
| Unemployed | 22.22% | 38% | 62% |
| Did not specify | 1.71% | 0% | 100% |

The number of unemployed female respondents is almost twice higher than male (13.68% and 8.55% accordingly). This suggests that *female respondents have less employment opportunities* and part of the reason could be their level of education mentioned in the preceding section. This in turn suggests that female respondents seem to be more vulnerable to economic and financial insecurities resulting from lack of sustainable income and job opportunities.

### Table 21 Respondents' occupation

| Category | Total | Male | Female |
|---|---|---|---|
| State institutions | 53.93% | 44% | 56% |
| Dehkan farm | 14.61% | 92% | 8% |
| Service sector | 10.11% | 64% | 36% |
| Private sector | 12.36% | 33% | 67% |
| Pensioner | 5.62% | 64% | 36% |
| Other | 3.37% | 100% | 0% |

Over half of respondents are employed in state institutions[27] (53%, including 44% male and 56% female). Those engaged in farming comprise around 15%, including 92% male and 8% female. Other respondents are employed in private sector (12.36%, including 33% male and 67% female) and in services (10.11%, including 64% male and 36% female) sector. The remaining respondents are pensioners (5.62%), or do other jobs (3.37%).

## Annex 2 List of interviewers conducted the survey in the pilot sites of the Republic of Tajikistan

| Name of interviewer | Pilot sites |
|---|---|
| 1. Bahrullah Isufzoda | Vose |
| 2. Firdavs Umarov | Penjikent |
| 3. Gayrat Boboyev | Isfara |
| 4. Guldast Shaydulloev | Hamadoni |
| 5. Ikrom Negmatov | Fayzobod |
| 6. Hokimjon Naimov | Rasht |
| 7. Khurshed Sharipov | Dangara |
| 8. Mahmad Kholov | Yavan |
| 9. Mukhabbat Rakhmatov | Tavildara |
| 10. Sanavbar Bachodirova | Gonchi |
| 11. Shahrigul Kodirova | Darvaz |
| 12. Shahrijon Goibova | Shahriston |
| 13. Zabihullo Eshunov | Nurobod |

[27] Public sector includes the following institutions: District and Jamoat administration, Schools, Hospitals, State Unitary Enterprises, etc.

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12. Ministry of Economic Development and Trade of the Republic of Tajikistan, 'Fayzabad District Development Programme for 2016–2020';

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Research for climate-resilient futures

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