**CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE**

**Faculty of Tropical AgriSciences**

**Landscape characteristics and socio-ethnic factors influencing farmers' attitudes towards adopting agroforestry in Nepal**

MASTER’S THESIS

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**Appendices**

**List of the Appendices:**

Appendix 1: Questionnaire

**Appendix 1: Questionnaire**

**Dear Sir/Madam,**

**Namaste,**

I would like to ask you to fill in the following questionnaire. I am a Ph.D. student at the Czech University of Life Sciences Prague, Czech Republic. I am conducting this study to learn more about the “***Effect of climate change on food security of smallholder farmers in Nepal and on migration*** “. All the data are collected anonymously. I would appreciate it very much if you would fill in and help me to conduct this research. Thank You!

|  |  |
| --- | --- |
| ID number (M/D/C ………. M= Mustang, B=Baglung, C= Chitwan) | ………………………………………………………………………. |
| Name of the respondent  | ………………………………………………………………………. |
| Phone number/email | ………………………………………………………………………. |
| Rural Municipality name and ward number | ………………………………………………………………………. |
| Date of the interview | ………………………………………………………………………. |
| Geographical coordinates/ Altitude  | ………………………………………………………………………. |

**Section A: Household section- Socio-economic characteristics**

|  |  |  |
| --- | --- | --- |
| **No.** | **Questions**  | **Responses**  |
| **1** | Sex of the HH (Household Head) | Female ☐ =0Male ☐ =1 |
| **2** | Current age of HH (in years) Age Category, less than 20, 21-30, 31-40, 41-50, 51-60, 61 and more | …………….  |
| **3** | What is your highest education level? | Nonformal☐=1Primary☐=2Secondary☐ = 3Higher Secondary☐ =4Undergraduate☐ = 5Postgraduate☐ =6  |
| **4** | What is your marital status? | Single☐=1 Married☐= 2Divorced☐=3Widowed☐=4others ……..=5 |
| **5** | What ethnicity do you belong??  | Kshetri = 1Brahmin = 2Magar =3 Tharu=4 Tamang=5Newar=6Sherpa=7 Gurung =8Thakali=9Dalit=10 Rai=11 Madeshi=12 Others=13  |
| **6** | What is your household size (in persons)? | ……………… |
| **6a** | Total number of Children (<15 years):  |  |
| **6b** | Total number of adults (16-59 years): active labor |  |
| **6c** | Total number of adults (>59 years): |  |
| **6d** | Total number of males in household  |  |
| **6e** | Total number of females in household |  |
| **7** | How long have you been working as a farmer? (years) |  |
| **8** | Are you involved in some farmers group (Krishi samuha)? | Yes☐=1No ☐ =2 |
| **8a** | If yes, what kind of group it is?  | Producer☐=1 Processors☐=2Marketing☐= 3Multipurpose☐=4 Others (specify) ……=5 |
| **9** | Do you own land? | Yes ☐=1No ☐= 2 |
| **9a** | What is the total amount of land your household owns now (ha)? (1 Ropani=0.050873704704 hectare) | ……………… |
| **9b** | What is the total amount of land your household cultivated (both owned & rented) (in ha) this year? | ………………. |
| **9c** | What is the total amount of land your household use for pastoral (both owned & rented) (in ha) this year? | ………………. |
| **9d** | What is the land you cultivated 5 years ago? | More than now=1Less than now=2Equal as now=3N/A=99  |
| **10** | What type of farming you have? | Arable farming (Crops) ☐= 1Pastoral farming (Livestock) ☐ =2Mixed farming (Arable & Pastoral) ☐=3 |
| **10a** | Please indicate what are the major crops you cultivated in last 2-3 years? | **Main crops** | **In %**  |
| Rice=1 |  |
| Wheat=2 |  |
| Maize=3 |  |
| Millets=4 |  |
| Barley=5 |  |
| Buckwheat=6 |  |
| Oats=7 |  |
| Potato=8 |  |
| Beans=9 |  |
| Vegetables=10 |  |
| Fruits=11 |  |
| Others=12 |  |
| **10b** | How is your food production compared to 5 years ago? | Less now =1More now=2No difference=3Don’t know=4  |
| **10c** | Please indicate what are the major livestock you have? |  |  **Number**  |
|  **Livestock**  | …………. |
| Cattle [ ] =1 | …………. |
| Yak/nak [ ] =2 | …………. |
| Horse/ Mule[ ] =3 | …………. |
| Goat/Sheep [ ] =4 | …………. |
| Buffalo [ ] =5 | …………. |
| Pigs[ ] =6 | …………. |
| Chicken[ ] =7 | ………….  |
|  |  | Others……..=8 |  |

**Section B: Access to credit & market**

|  |  |  |
| --- | --- | --- |
| **1** | How do you finance investment in your farm in last year? (Multiple choice allowed)  | Family saving [ ] , =1A loan from bank/Government [ ] =2Borrow from friends and relatives [ ] =3Farmers Group [ ] =4 Non-profit organizations [ ] =5Remittances [ ] =6 Family saving/ remittance= 7 family saving/Farmers group=8 Family saving/Borrow from friends and relatives=9 Family saving/ loan from the bank and government= 10Others (please specify) Labor work= 11 |
| **1a** | What share of the household income do you get by your farm (in%)? | 0-25% [ ]  =126-50% [ ] =251-75% [ ] =376-100% [ ] =4 |
| **2** | Do you have off-farm occupation?  | Yes ☐=1No ☐=2 |
| **2a**  | **If yes, what are the major off-farm activities?** | **Activities** | **income share (%)** |
| Self-employed (Permanent work) =1 | …….. |
| Self-employed (temporary work) =2 | …….. |
| Retailer=3 | …….. |
| Labor work=4  | …….. |
| Administrative(office) work=5 |  |
| Others=6 | …….. |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| How often did this happen?  | **Never=(1)**  | **Rarely (once a year)=2** | **Sometimes (few times a year-** **2-3 times a year)=3** | **often (monthly)=4** | **Very often (weekly) =5** |
| **3** | Do you sell your farm products to the market? |  |  |  |  |  |
| **3a** | Do you buy farm products from the market? |  |  |  |  |  |
| **3b** | What is the nearest distance to the next market (in km and in hour)  | …….. km ……………hours  |
| **4** | How much total money did you earn from your farm in 2020 (in NPR)?  | <50,000 ☐ =150,001 to 100,000 ☐ =2100,001 to 150,000 ☐=3150,001 to 200,000 ☐=4>200,001 ☐=5 |
| **4a** | How satisfied is your family with the satisfaction to cover the following needs from your income in last 2-3 years? | **Food** | **Water** | **Shelter** | **Cloths** | **Health** |
| Very satisfied [ ]  =1 | Very satisfied [ ]  =1 | Very satisfied [ ]  =1 | Very satisfied [ ]  =1 | Very satisfied [ ]  =1 |
| Satisfied [ ] =2 | Satisfied [ ] =2 | Satisfied [ ] =2 | Satisfied [ ] =2 | Satisfied [ ] =2 |
| Neutral [ ] =3 | Neutral [ ] =3 | Neutral [ ] =3 | Neutral [ ] =3 | Neutral [ ] =3 |
| Dissatisfied [ ] =4 | Dissatisfied [ ] =4 | Dissatisfied [ ] =4 | Dissatisfied [ ] =4 | Dissatisfied [ ] =4 |
| Very dissatisfied [ ] =5 | Very dissatisfied [ ] =5 | Very dissatisfied [ ] =5 | Very dissatisfied [ ] =5 | Very dissatisfied [ ] =5 |
| **5** | Which of the following sustainable farming practices do you use?  | Yes=1No=2 Rotating crops [ ] , =Intercropping [ ]  =Planting cover crops [ ] , =Reducing or eliminating tillage [ ] , =Applying integrated pest management [ ] , =Integrating livestock and crops [ ] , =Adopting agroforestry practices [ ] , =Use of organic fertilizer [ ] , =Irrigation [ ]  = |
| **6** | How do you perceive the price of inputs? Not applicable=5 | **Seeds**  | **Irrigation system** | **Pesticides**  | **Chemical fertilizer (eg.urea)** |
| Extremely cheap [ ] =1 | Extremely cheap [ ] =1 | Extremely cheap [ ] =1 | Extremely cheap [ ] =1 |
| Cheap [ ] =2 | Cheap [ ] =2 | Cheap [ ] =2 | Cheap [ ] =2 |
| Affordable [ ] =3 | Affordable [ ] =3 | Affordable [ ] =3 | Affordable [ ] =3 |
| High[ ] =4 | High[ ] =4 | High[ ] =4 | High[ ] =4 |
| Extremely high [ ] =5 | Extremely high [ ] =5 | Extremely high [ ] =5 | Extremely high[ ] =5 |

**Section C: Climate change awareness**

|  |  |  |
| --- | --- | --- |
| **1** | Are you aware of climate change? | Yes [ ]  =1 , No [ ] = 2 |
| **In the last 10-15 years have you experienced the following changes?** |
| **2** | It is generally warmer these days, | Agree [ ]  =1 , Disagree [ ] =2, No change [ ]  =3 , Don’t know [ ] =4  |
| **3** | Intensity of extreme heat | Higher =1, lower=2, unpredictable=3, don’t know=4 |
| **4** | The onset of summer these days occurs, | Earlier [ ] = 1, Later[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **4**  | Duration of winter these days are, | Longer [ ] =1, Shorter[ ] =2 No change [ ] =3, Don’t know [ ] =4 |
| **5** | The amount of rainfall these days are,  | Less [ ] =1, More [ ] = 2Unpredictable [ ] =3, Don’t know[ ] = 4  |
| 5a | Intensity of Rainfall  | Low=1, more =2, unpredictable=3, don’t know=4  |
| **6** | The onset of rainfall these days occurs,  | Earlier [ ] = 1, Later[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **7** | Snowfall these days starts,  | Earlier [ ] = 1, Later[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **7a** | Intensity of coldness | Low=1, more =2, unpredictable=3, don’t know=4  |
| **8** | Incidence of drought these days are,  | Higher [ ] =1 , Lower[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **9** | Incidence of fire these days are,  | Higher [ ] =1 , Lower[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **10** | Incidence of floods and landslides these days are,  | Higher [ ] =1 , Lower[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **11** | Incidence of avalanches these days are,  | Higher [ ] =1 , Lower[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **12** | Amount of forest area these days are,  | Higher [ ] =1 , Lower[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **13** | Populations of wildlife species these days are,  | Higher [ ] =1 , Lower[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **14** | Blooming time of common plants these days occurs,  | Earlier [ ] = 1, Later[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **15** | Plantation of major crops these days occurs,  | Earlier [ ] = 1, Later[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **16** | Harvesting of major crops these days occurs,  | Earlier [ ] = 1, Later[ ] =2No change [ ] =3, Don’t know [ ] =4 |
| **17** | Increase of pest and disease outbreak these days are, | Higher [ ] =1 , Lower[ ] =2No change [ ] =3, Don’t know [ ] =4 |

**Section D: Climate change adaptations (1,2) strategies and vulnerability (3,4)**

|  |  |  |
| --- | --- | --- |
| **1** | **Which of the following strategies you have adopted so far?** | **How long are you using this strategy (in years)?** |
| Crop diversification (e.g., different cultivars) [ ] =1 | **…………….** |
| Changing planting date [ ] =2 | **…………….** |
| Changing of crop planted [ ] =3  | **…………….** |
| Early matured varieties [ ] =4 | **…………….** |
| Drought tolerant/resistant varieties [ ] =5 | **…………….** |
| Irrigation system [ ] =6 | **…………….** |
| Rainwater harvesting [ ] =7 | **…………….** |
| reduced tillage [ ] =8 | **…………….** |
| Mulching [ ] =9 | **…………….** |
| Agroforestry [ ] =10 | **…………….** |
| Off-farm income [ ] =11 | **…………….** |
| Fallow land=12 |  |
| Temporary migration [ ] =13  | **…………….** |
| Organic fertilizer=14 | **…………….** |
| Other (Please specify) …………….=15 | **…………….** |

|  |  |
| --- | --- |
| **2**  | **How often do you have access to the following information channels regarding weather information?**  |
| **Sources** | **Never-1, Once a year-2, Once a month-3, Once a week-4, Everyday-5**  |
| Internet  | **1 2 3 4 5** |
| Radio (e.g. weather forecast)  | **1 2 3 4 5** |
| Television (e.g. weather forecast) | **1 2 3 4 5** |
| Farmers group (Krishi Samuha) | **1 2 3 4 5** |
| Research Institution/University | **1 2 3 4 5** |
| Print media (e.g. newspaper) | **1 2 3 4 5** |
| Mobile phone  | **1 2 3 4 5** |
| Other (please specify):  | **1 2 3 4 5** |

|  |  |
| --- | --- |
| **3** | **How was the influence/impact of the following factors on your farm production in the last 5 years?** |
| **Factors** | **Very negative-1, negative-2, no change-3, positive- 4, very positive-5**  |
| Rise in temperature | **1 2 3 4 5** |
| Erratic rainfall | **1 2 3 4 5** |
| Drought  | **1 2 3 4 5** |
| Windstorm | **1 2 3 4 5** |
| Overflooding | **1 2 3 4 5** |
| Hailstorm  | **1 2 3 4 5** |
| Crop pest and disease outbreak | **1 2 3 4 5** |
| Livestock disease outbreak | **1 2 3 4 5** |
| Decrease in soil quality  | **1 2 3 4 5** |
| Other (please specify) …………………………… | **1 2 3 4 5** |

|  |  |
| --- | --- |
| **4** | **How often following consequences of climate change occurred in last 5 years?**  |
| **Factors** | **Never-1, Rarely (once in a 5 years)-2, sometimes (2-3 times in 5 years) -3, often (4-5 times in 5 years)-4, Always (more than 5 times)-5** |
| Reduce crop yield | **1 2 3 4 5** |
| shortage of livestock feeds | **1 2 3 4 5** |
| Dead of livestock | **1 2 3 4 5** |
| Crop pest and disease outbreak | **1 2 3 4 5** |
| Destruction of farmland | **1 2 3 4 5** |
| Destruction of habitat (human being & animal) | **1 2 3 4 5** |
| Physical injury to the family member/me | **1 2 3 4 5** |
| Dead of family member (except earthquake)  | **1 2 3 4 5** |
| Lack of financial capital  | **1 2 3 4 5** |
| Others (please specify) ……………………………… | **1 2 3 4 5** |
| Others (please specify) ……………………………… | **1 2 3 4 5** |

**Section E:**

|  |
| --- |
| **Food consumption and food sources (FCS)** |
| Who decides what will be eaten? | **Female**[ ] **=1** | **Male** [ ] **=2** |
|  | **Female**  | **Male**  |
| **1** | How many meals did the adults (18+) in this household eat yesterday? | 1.|\_\_| | 2.|\_\_| |
| **2** | How many meals did the children between the age of 5-17 eat yesterday? | 1.|\_\_| | 2.|\_\_| |
| **3** | How many meals did the children between the age of 2-< 5 eat yesterday? | 1.|\_\_| | 2.|\_\_| |
| **4** | **Food items/groups** | **Examples** | **4.1. How many days over the last 7 days, did members of your household eat the following food items, prepared and/or consumed at home?** | **4.2. How was this food acquired?** **Write the main source of food for the past 7 days** |
| **Days**  | **Source** |
| **1** | Cereals or tubers=1 | Rice, potato, naan etc. | …………… | …………… |
| **2** | Pulses and groundnuts=2 | Beans, peas, Cashew nuts | …………… | …………… |
| **3** | Milk and milk products=3 | Fresh milk, powdered milk, yogurt, cheese, other dairy products  | …………… | …………… |
| **4** | Eggs, meat, fish, shells=4 | Organ meat, flesh meat, fish, eggs, etc. | …………… | …………… |
| **5** | Vegetables=5 | carrots, spinach etc. | …………… | …………… |
| **6** | Fruits=6 | Apple, banana, etc. | …………… | …………… |
| **7** | Sugar=7 | Sugar, honey, jam, cakes, pastries, (sugary drinks) | …………… | …………… |
| **8** | Oil=8 | Vegetable/palm oil, butter, ghee, other fats | …………… | …………… |
| **9** | Condiments=9 | Spices, tea, coffee, salt, spices, tomato / sauce | …………… | …………… |
| **Food acquisition codes**:01 = purchase (cash)02 = purchase (credit)03 = food assistance (General Food Distribution) | 04 = food assistance (food card)05 = army distributing food06 = support from relatives/friends | 07 = barter and exchange08 = borrowing09 = begging/scavenging  |  | 10 = gathering of wild foods (plants/insects)11 = hunting/fishing12 = own production |

|  |
| --- |
| **HOUSEHOLD COPING STRATEGIES (rCSI)**  |
|  | **During the last 7 days, were there days (and, if so, how many) when your household had to employ one of the following strategies (to cope with a lack of food or money to buy it)?** | **Frequency (number of days from 0 to 7)** |
| **1** | Relied on less preferred, less expensive food=1 | ………. |
| **2** | Borrowed food or relied on help from friends or relatives=2 | ………. |
| **3** | Reduced the number of meals eaten per day=3 | ………. |
| **4** | Reduced portion size of meals at meals time=4 | ………. |
| **5** | Restrict consumption by adults in order for young children to eat=5 | ………. |

**Section F: Migration**

1. Household size and migrants

|  |  |  |
| --- | --- | --- |
| **Variable**  | **Male =2** | **Female =1** |
| Household size excluding migrants (current)  |  |  |
| How many have migrated internally (inside the country) for the past 10 years  |  |  |
| How many have internationally (outside of the country) migrated for the past 10 years |  |  |
| **3** | Do you receive remittances or items from migrant members |  Yes [ ] =1 No [ ] =2, N/A=99Liv |
| **3a** | If yes, how often do you received the following items from migrants for the past 5-10 years |
|  |  | **Never=1** | **Rarely (once a year)=2** | **Sometimes (Few times a year)=3** | **Often (Monthly)=4** | **Very Often (Weekly)=5** |
| Money  |  |  |  |  |  |
| Farm input  |  |  |  |  |  |
| Cloth & household belongings |  |  |  |  |  |
| Food items |  |  |  |  |  |
| Others…… |  |  |  |  |  |
|  | Not applicable=x |  |  |  |  |  |
| **4** | Please indicate the share of your livelihood which was covered by money or stuff sent by migrant members last year? | 0-25 % [ ] =1, 26-50% [ ] =251-75% [ ] =3, More than 75% [ ] =4 |
| **5** | Please indicate the importance of remittances to cover the following (1 lowest importance, 5 highest importance) |
|  | **Importance of remittances** | **1-not at all important** | **2-slightly important** | **3-Neutral** | **4-very important** | **5-Extremely important** |
| Buying food/ cloths |  |  |  |  |  |
| Education |  |  |  |  |  |
| Health expenses |  |  |  |  |  |
| Buying Seed/ fertilizer |  |  |  |  |  |
| Buying pesticides |  |  |  |  |  |
| Buying Agri tools  |  |  |  |  |  |
| Repay debts  |  |  |  |  |  |
| Financing migration costs of additional family members  |  |  |  |  |  |
| House construction and maintenance  |  |  |  |  |  |
|  | Others …………... |  |  |  |  |  |
| **6** | Ideally, if you had the opportunity, would you like tomove **Temporarily** to another place?  | Yes [ ] =1 No [ ] =2 |
| **6a** | Where do you want to move? | To the same/different village=1, to the urban area=2 |
| **6b** | Ideally, if you had the opportunity, would you like tomove **Permanently** to another place?  | Yes [ ] =1 No [ ] =2 |
| **7** | If 6&6a is Yes, are you planning to move in the next 12 months? | Yes [ ] =1 No [ ] =2 |
| **8** | If 7 is Yes, have you done any preparation for this move?(for eg; buy properties or making arrangements for the move) | Yes [ ] =1 No [ ] =2 |
| **9** | If any questions from 6 to 8 is Yes,What is the primary reason you choose to move?(Multiple selection allowed) | Education [ ]  =1 Search for work [ ] =2 , Job transfer/ opportunity [ ] =3, Drought=4 , Flood [ ] =5, landslides=6, Family problems [ ] =7, Better livelihoods[ ] =8, Do not own Agri land to work here [ ] =9Don’t have enough land [ ] =10, Poor quality of land [ ] =11Other (Please specify) =12…… |
|  |  |  |
| **10** | How often do your household had to deal with the lack of labor available for work in agriculture in last 5 years?  | Never [ ] =1, Rarely [ ] =2, Sometimes [ ] =3, Often [ ] =4, Always [ ] =5  |

**Section G: Covid-19 in food security**

|  |
| --- |
| **COVID-19 and Food security** |
| **1** | Which statement best reflects your food situation in this pandemic time? | I increased my food intake [ ] =1I had no difficulties eating enough food [ ] =2I ate less preferred foods [ ] =3I skipped meals or ate less than usual [ ] =4 I went one whole day without eating [ ] =5 |
| **2** | Does your household had/have food stock? | Yes, less than 1 week [ ] =1, Yes, 1 week [ ] =2Yes, 2-3 weeks [ ] =3, Yes, 1 months [ ] =4Yes, more than 1 months [ ] =5 |
| **3** | What is the situation of your household income in this pandemic time? | Increased in salary/revenue [ ] =1, No change [ ] =2Job loss [ ] =3, Reduced salary/revenue [ ] =4Had to resort to alternative source of income[ ] =5 |
| **4** | Looking ahead, how do you expect your livelihood will be impacted as result of disruptions from COVID-19? | No impact [ ] =1, slightly impact [ ] =2Somewhat impact [ ] =3, very impact [ ] =4, Severe impact [ ] =5 |
| **5** | In this pandemic and the lockdown started, have you received any food, cash, or other support from anyone else that you do not usually receive? | Yes [ ] =1No [ ] =2 |
| **5.1** | If 5=yes, could you please indicate the source?  | Government [ ] =1 Relatives [ ] =2 Neighbors [ ] =3 Community leaders [ ] =4 NGOs [ ] =5Other (please specify)=6 ……………………. |
| **6** | Is someone in your family had to return home from abroad due to COVID-19? | Yes [ ] =1No [ ] =2 |