**CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE**

**Faculty of Tropical AgriSciences**

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

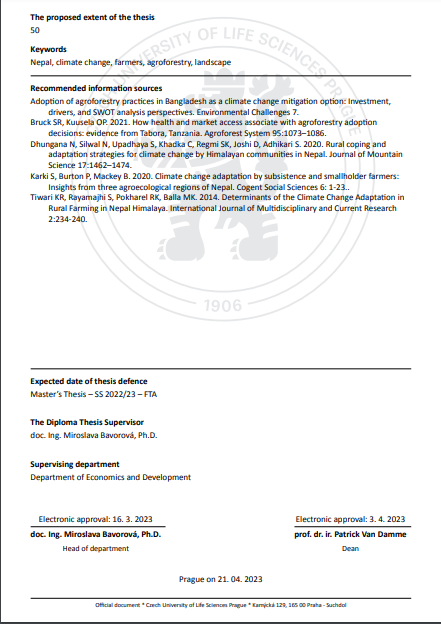
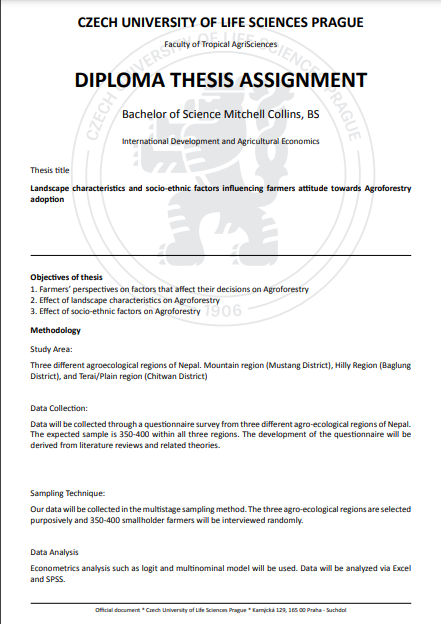
MASTER’S THESIS

Prague 2023

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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 ☐ =0  Male ☐ =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☐=1  Primary☐=2  Secondary☐ = 3  Higher Secondary☐ =4  Undergraduate☐ = 5  Postgraduate☐ =6 | |
| **4** | What is your marital status? | Single☐=1  Married☐= 2  Divorced☐=3  Widowed☐=4  others ……..=5 | |
| **5** | What ethnicity do you belong?? | Kshetri = 1  Brahmin = 2  Magar =3  Tharu=4  Tamang=5  Newar=6  Sherpa=7  Gurung =8  Thakali=9  Dalit=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☐=1  No ☐ =2 | |
| **8a** | If yes, what kind of group it is? | Producer☐=1  Processors☐=2  Marketing☐= 3  Multipurpose☐=4  Others (specify) ……=5 | |
| **9** | Do you own land? | Yes ☐=1  No ☐= 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=1  Less than now=2  Equal as now=3  N/A=99 | |
| **10** | What type of farming you have? | Arable farming (Crops) ☐= 1  Pastoral farming (Livestock) ☐ =2  Mixed 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 =1  More now=2  No difference=3  Don’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 , =1  A loan from bank/Government =2  Borrow from friends and relatives =3  Farmers Group =4  Non-profit organizations =5  Remittances =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= 10  Others (please specify) Labor work= 11 | |
| **1a** | What share of the household income do you get by your farm (in%)? | 0-25%  =1  26-50% =2  51-75% =3  76-100% =4 | |
| **2** | Do you have off-farm occupation? | Yes ☐=1  No ☐=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 ☐ =1  50,001 to 100,000 ☐ =2  100,001 to 150,000 ☐=3  150,001 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=1  No=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=2  No 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 = 2  Unpredictable =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=2  No change =3, Don’t know =4 |
| **7** | Snowfall these days starts, | Earlier = 1, Later=2  No 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=2  No change =3, Don’t know =4 |
| **9** | Incidence of fire these days are, | Higher =1 , Lower=2  No change =3, Don’t know =4 |
| **10** | Incidence of floods and landslides these days are, | Higher =1 , Lower=2  No change =3, Don’t know =4 |
| **11** | Incidence of avalanches these days are, | Higher =1 , Lower=2  No change =3, Don’t know =4 |
| **12** | Amount of forest area these days are, | Higher =1 , Lower=2  No change =3, Don’t know =4 |
| **13** | Populations of wildlife species these days are, | Higher =1 , Lower=2  No change =3, Don’t know =4 |
| **14** | Blooming time of common plants these days occurs, | Earlier = 1, Later=2  No change =3, Don’t know =4 |
| **15** | Plantation of major crops these days occurs, | Earlier = 1, Later=2  No change =3, Don’t know =4 |
| **16** | Harvesting of major crops these days occurs, | Earlier = 1, Later=2  No change =3, Don’t know =4 |
| **17** | Increase of pest and disease outbreak these days are, | Higher =1 , Lower=2  No 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 food  06 = support from relatives/friends | | 07 = barter and exchange  08 = borrowing  09 = begging/scavenging | |  | | 10 = gathering of wild foods (plants/insects)  11 = hunting/fishing  12 = 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% =2  51-75% =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 to  move **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 to  move **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 =9  Don’t have enough land =10, Poor quality of land =11  Other (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 =1  I had no difficulties eating enough food =2  I ate less preferred foods =3  I 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 =2  Yes, 2-3 weeks =3, Yes, 1 months =4  Yes, 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 =2  Job loss =3, Reduced salary/revenue =4  Had 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 =2  Somewhat 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 =1  No =2 |
| **5.1** | If 5=yes, could you please indicate the source? | Government =1 Relatives =2 Neighbors =3 Community leaders =4 NGOs =5  Other (please specify)=6 ……………………. |
| **6** | Is someone in your family had to return home from abroad due to COVID-19? | Yes =1  No =2 |