# The Rufford Small Grants Foundation
# Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

**Josh Cole, Grants Director**

| **Grant Recipient Details** | |
|---|---|
| **Your name** | Haimanot Reta Terefe |
| **Project title** | Ethnobotanical Study of Wild edible plants along Temcha River Watershed : Contribution to Watershed Management |
| **RSG reference** | 17895-1 |
| **Reporting period** | 1 year |
| **Amount of grant** | £4820 |
| **Your email address** | rhaimanot@gmail.com |
| **Date of this report** | 7/20/2016 |

**1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

| Objective | Not achieved | Partially achieved | Fully achieved | Comments |
|---|---|---|---|---|
| Delineating the watershed for study area by using Arc GIS | | | X | By using Arc GIS, the study area was delineated and named as Temcha River Watershed. It lies in between $10^0$ 23' to $10^0$ 41'N latitude and $37^0$ 16' to $37^0$ 45' E longitude which constitute 73, 147 ha of land. A total of 27 different Kebeles were found. The riverine vegetation were considered for Wild Edible Plant (WEPs) collection and the people lived in the watershed were used for ethno botanical study. |
| Selecting the representative lowest politically administrative Area (Kebeles) | | | X | By using stratified sampling a total of six Kebeles that belongs to the lower, mid and upper catchment were selected for detailed WEP ethnobotanical study |
| Selection of Informants for Ethnobotanical data collection | | | X | By using single population proportion formula a total of 384 informants were selected. These number considers that there were no similar study conducted on this area |
| Wild edible plant Ethnobotanical data collection | | | X | Through semi-structured interview a total of 37 WEPS and their ethnobotany were documented under four major uses : Food category [Vegetables (plants whose leaves, stems or even unripe fruits or seeds were consumed): fruits or seeds (ripe); Home-made liqueurs or other alcoholic drinks; Herbal teas; seasoning (salt, herbs, or spices added to food to enhance the flavour)], medicine, |

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| | | | | fodder(feed for livestock), Energy source (plants used as firewood and/or for making charcoal), Environmental use (live fence, dry fence, hedges, shade, shelter, erosion control, ornamental and soil improvement, botanical pesticides, bio fertilizers others), Poison ( toxic for human, livestock and other animals, insecticide and insect repellent), Material culture (handicrafts, construction materials, agricultural tools, roof thatch, dyes, pillow, musical instrument, toothbrush, comb, rope, drum, mortar and pestle) |
| Wild edible plant collection | | | X | A total of 37 WEPs were collected |
| Plant identification | | X | | Twenty of the most culturally useful multipurpose WEPs identified by the participation of Focus Group Discussion participants (FGDP) were identified and authenticated plant samples were stored at National Herbarium of Ethiopia. Whereas, others are being under collection |
| FGD to determine and select the plant to be analysed | | | X | Multiple criteria were applied to select the most culturally useful WEPs by FGDP. |
| Edible plant part collection for analysis | | X | | Based on the phenology data collected from total informants the most culturally useful WEP parts were collected. Only two out of 20 were not collected due to the late fruiting stage. It will be collected in August 2016. |
| Food composition analysis ( proximate analysis ) | | X | | Total protein, total fat, ash and moisture for 18 different WEPs were analysed whereas, fibre and carbohydrate were not yet completed. It is in the process. |
| Food composition analysis (Mineral | | X | | Well prepared samples were submitted to Addis Ababa University Food Science |

| | | | | |
|---|---|---|---|---|
| analysis) | | | | and Nutrition Laboratory. It is in the process of analysis not yet completed. Here with discussion to my advisors only the most difficult minerals like calcium, zinc and iron have got attention in the mineral analysis |

**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

From semi-structured interview the phenology were summarised and real edible part collection is demanding an extended period of time. These were one of the unforeseen difficult arose in the field. To resolve this some sort of budget adjustment was done.

The advisors had forced me to do anti-nutritional analysis of the selected culturally useful multipurpose WEPS. To accomplish this some of the mineral analysis proposed in the grant fund and the total number of plants were reduced (from mineral only calcium, iron and zinc are arranged to be analysed and the total number of plants were reduced from 30 to 20 different plants)

**3. Briefly describe the three most important outcomes of your project.**

a. Detailed ethnobotanical profile of all WEPs collected from the study area were documented.
b. From proximate analysis, total fat, total protein, ash and moisture of 18 most culturally important WEPs were analysed.
c. Anti-nutritional analysis (phytate, tannine and oxalate) of 18 most culturally useful WEPs were analysed.

**4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).**

Throughout the study, a total of 18 field guiders, 24 FGDP, 12 key informants from the local community and 18 Agricultural Extension workers at kebele level in assistant during data collection were directly participated.

**5. Are there any plans to continue this work?**

Yes.

a. After completion of the remaining work, Antioxidant potential of the collected edible plant part will be done to see the health impact of this foods other than nutritional benefit.
b. Establishing WEP nursery site to propagate the most nutritional important WEP that improve the nutritional status of the community.

**6. How do you plan to share the results of your work with others?**

Results of this work will be shared to the larger public through

a. Publication on well-known and having good impact factor.
b. Preparing short communication paper in English by giving emphasis to its scientific name, local name, botanical description, coloured picture of each plant, phenology, food composition and ethnobotany. This should be translated to local language for better understanding.

**7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?**

The RSG was used for 1 year but due to the nature of the research some part of the analysis were not completed

**8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.**

| Item | Budgeted Amount | Actual Amount | Difference | Comments |
|---|---|---|---|---|
| Payment for researcher | 791 | 856.92 | 65.92 | For edible plant part collection the researcher stayed an extra day in the field |
| Payment for field assistance | 410 | 665.6 | 255.6 | A total of six extra field assistance were participated to |

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| | | | | complete the data collection on time |
| Payment for data collector | 256 | 576 | 320 | A total of an extra data collector was participated |
| Payment for FGDP | 284 | 284 | 0 | Used as planned |
| Payment for key informants | 142 | 142 | 0 | Used as planed |
| Payment for proximate analysis | 1526 | 931.2 | 594.8 | The total number of plants reduced to 20 from 30 |
| Payment for mineral analysis is | 1411 | 384 | 1027 | Tests for phosphorous, Magnesium, Manganese and copper is omitted and the total number of plants were reduced to 20 from 30 |
| Payment for anti-nutritional analysis | 0 | 960 | 960 | These analyses were added by advisors for addressing the anti-nutritional value of the selected plants. |
| **TOTAL** | **4820** | **4799.72** | **20.28** | |

**9. Looking ahead, what do you feel are the important next steps?**

a. Completing the lab work.
b. Submitting the final paper to RSGF.
c. Publishing the results.

**10. Did you use the RSGF logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?**

I had used the logo during progress report and I have been explaining the contribution of the fund to different institutes

**11. Any other comments?**

I truly appreciate this fund to assist students who has been engaged on research and highly testified by absence of fund to realise their dreams. Disobediently your trust and assistance should continue to assist the selected applicants to perform their work in the future also. After the work has completed, there should be a strict follow up to be published the results on high impact factor journals therefore RSGF organisers should extend their hand In this regard.

Dried plant fruit

Edible Fruit collection from Phoenix reclinata Jacq

Gardenia ternifolia Schumach. & Thonn

Plant data collection

Rubus apetalus Poir

Ximenia americana L

Wild Edible Plant Ethnobotanical Data Collection

Type of Vegetation in Temcha River Watershed

Part of the analysis