

The Rufford Foundation Final Report

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

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. 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. Please note that the information may be edited for clarity. 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	Alexandr Iscenco
Project title	The Codru Quest: Economic Valuation of the Ecosystem Services of the Codru Protected Area by using Gamification
RSG reference	20200-1
Reporting period	September 2016 – September 2017
Amount of grant	4998
Your email address	alexander@megageneration.com
Date of this report	17 th of September 2017

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
<p><u>Main Goal:</u> By 2018 the threat of deforestation and forest ecosystem degradation in the Codru Nature Reserve and Codru forest is reduced and the forest cover is restored and protected more effectively on the basis of active involvement of Moldovan communities and environmental organizations, who value the ecosystem services and biodiversity in the Codru forest, into collaborative management and governance of the area.</p>				<p>This is an ambitious goal that is yet to be evaluated, as the deadline for it is at the beginning of 2018. However, we have already made progress towards it through having the following accomplished:</p> <ul style="list-style-type: none"> • We have engaged 37 young people and 101 members of rural communities in the project with its preliminary research and raising awareness activities; • We have estimated and presented the results of the research on how valuable are ecosystem services and biodiversity in the Codru forest for Moldovan citizens with special focus on rural residents most dependent on these ecosystem services; • Based on research results we have prepared the public policy proposal for next steps in establishing collaborative management of the Codru forest.
<p><u>Objective #1:</u> By 01.01.2017 200 Moldovan residents have completed the Codru Quest e-learning course and survey, received knowledge on the importance and value of the Codru Nature Reserve and the Codru forest with its 2 targeted endangered species, small-flowered black hawthorn (<i>Crataegus pentagyna</i>) and the charismatic</p>				<p>We educated and surveyed a total of 201 respondents on their attitude and valuation of ecosystem services and biodiversity in the Codru Nature Reserve and the Codru forest. Among them 100 were the residents of the capital city Chisinau and 101 members of local communities of nine villages around the forest.</p> <p>The respondents' answers to the economic valuation survey were processed, and willingness-to-pay was estimated for each of the key attributes: expansion of the protected area and forest, conservation of plant species, conservation, of insect</p>

<p>stag beetle (<i>Lucanus cervus</i>), and provided their economic valuation data for ecosystem services and biodiversity in the PA and forest.</p>			<p>species, and better protection for the endangered species on the examples of <i>Crataegus pentagyna</i> and <i>Lucanus cervus</i>.</p>
<p><u>Objective #2:</u> By 01.05.2017 the Codru Quest research article / report with the respondents' economic valuation data, estimated results, conclusions, and suggestions for stakeholders is openly available on-line for other environmental organizations, individual researchers, research institutions, PA administration, local communities, and policy makers to use for environmental research and nature conservation purposes in the Codru Nature Reserve and the Codru forest.</p>			<p>We summarised the research process, results, and inputs for project stakeholders in the publication "The Codru Quest: Final Report". We also developed the web page dedicated specifically to the Codru Quest project with its description, outputs, and additional resources on its theme. It is accessible at www.megaimpact.md/the-codru-quest. On the web page we published the report along with infographics and public policy proposal. An additional achievement was the extra publication "The Codru Quest: Methodology". It is a methodological guideline written on the basis of the project experience and aimed to help environmental researchers conduct such an economic valuation study in a much better way. As the report, the methodology is accessible on-line.</p>
<p><u>Objective #3:</u> By 01.09.2017 the knowledge, economic valuation results, conclusions, and suggestions from the Codru Quest project are used by local communities and the Codru Nature reserve administration to reforest the logged areas of the PA and eliminate major anthropogenic threats for its ecosystem – all this being done under</p>			<p>We succeeded in engaging 37 young people and 101 members of rural communities in nature conservation and reforestation activities. Together with them we planted around 720 young trees that are now being cared for by our partner, Seed It Forward. By doing this, the participants learnt how to properly plant and take care of different tree species. And the reforestation and education activities were managed as missions of the Codru Quest in the on-line gamification platform MEGA Game. However, elimination of anthropogenic threats to the Codru forest ecosystem is far from being</p>

the guidance of gamified missions accessible for users on the web platform and application MEGA Game.			achieved, as such obstacles as corruption in state agencies and poverty in rural areas significantly slow down the process of negotiations and community engagement.
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

- Very limited data for preliminary research and project preparation.

It was very difficult to gather preliminary information and concrete data for evaluating the state of ecosystem services and biodiversity in the project area and then preparing the valuation scenario and choice sets. The reason of such difficulty was that the Codru Nature Reserve administration, as well as ecological research institutions in Moldova, performs insufficient measurements and monitoring of species in the country. For example, in terms of targeted endangered species, *Crataegus pentagyna* and *Lucanus cervus*, there is only very vague information on their population in the Codru Nature Reserve and the Codru forest. To solve this issue we made a total of 11 expeditions to the targeted project site to gather the data on the field. Talking about *Crataegus pentagyna*, we succeeded in locating only two representatives of the species. Talking about the charismatic *Lucanus cervus*, we found one representative, but most probably this very low number was affected by improper timing: stag beetle is present as imago in May – June, while we could do the first expedition only in September. And in spring-summer 2017 we had to focus on other activities, such as surveying and respondents' data collection.

- Challenge in engaging people in environmental research and conservation.

It was a significant challenge to bring young people, environmental organisations, and local communities together for collaborative research and nature conservation activities. One factor was that each of these stakeholders has different perception of environmental services and biodiversity conservation, which oppose each other in some attributes. Another factor was that in such a complex socio-economic-political situation of Moldova, where citizens, especially in rural areas, have limited income generation possibilities and news is full of political scandals, natural environment becomes the least of priorities. People simply do not connect the state of environment and ecosystem services to their own wellbeing and the wellbeing of their children, grandchildren, etc. Added to that is the fact that children and grandchildren are mostly studying or working in the capital city Chisinau or somewhere abroad. Certainly, the Codru Quest project had the objective to educate people on the value of ecosystem services for their wellbeing, but engaging them into that learning process was challenging. The use of IT and gamification certainly helped, but it was definitely not enough. Additional efforts in collaboration with other proactive and knowledgeable organizations are necessary in future projects.

- Issues with software developers for MEGA Game.

In relation to IT and gamification, we had difficulties in bringing additional software developers to our team to help with the development and integration of features into the on-line gamification platform MEGA Game necessary for the Codru Quest project. In Moldova the good ones are working only on foreign clients and charging rather expensive prices, while involving beginner developers has the risk of ruining the source code of MEGA Game. Luckily, the developer in our organisation managed to handle most of the development work, while we were able to get the desired partner for outsourced development. However, due to the delay with getting all this help and support the platform was not completely ready during the gamified activities in autumn 2016, which influenced the number of users we could engage in the on-line missions and trainings of the Codru Quest.

- Challenges of identifying and surveying the minimum required target population sample size.

The first objective of the Codru Quest project was about engaging and surveying 200 Moldovan residents about their attitude to and valuation of ecosystem services and biodiversity conservation in the Codru Nature Reserve and the Codru forest. This objective was achieved, with 100 respondents surveyed during the pilot testing phase of the project and 201 during the main research phase. However, while doing the estimation of the minimum necessary target population sample size we determined that it should be about 384 respondents for the results to be representative of the whole population. Certainly, we could not adjust time and budget to this update, relying on the fact that we gather more information from each respondent through our survey. This should hopefully be a reasonable offset for the reduced sample size.

Another unpleasant piece of news regarding the population sample size came from the final data analysis. The issue was that we identified large heterogeneity in the dataset and significant inconsistencies in choices of the respondents mainly from the capital city Chisinau influenced by strategic behaviour. These inconsistencies were clashing with the underlying environmental economic theory and basic logic. The only reasonable action was to label these responses as non-valid and remove them from dataset. This reduced the population sample size to only 107 respondents, about 53% from all the respondents surveyed. Although results from such a small sample size should be treated with care, we can now state that such results are valid and reliable, as they come from only valid and genuine answers. Further studies should have surveying of far larger number of respondents introduced in their research plans in order to account for such possible reductions during data analysis.

- Limited aggregation of willingness-to-pay (WTP) data and inability to estimate benefit transfer equation.

There were several challenges related to the aggregation of the estimated WTP values to the entire target population. Firstly, it was difficult to determine the exact target population for the results to be aggregated to. We decided to do this only to direct users of the Codru Nature Reserve and the Codru forest, therefore excluding their non-users, who nonetheless might still have existence, bequest, and altruistic values attached to them. Then, the information on the exact number of visitors to

the Codru Nature Reserve was not available at the time of conducting the research. The Codru PA administration started monitoring and registering the number of its visitors only in 2016, and the data were not available in the first half of 2017 to be used in the study. Therefore, for aggregation we used the approximate number of 3500 people that we received from the PA administration.

Another important issue was about estimating the benefit transfer equation, which is a recommended practice for all economic valuation studies. Unfortunately, due to a very small population sample size, small variation of income in this sample, and unconditional distribution at the sample level we could not estimate a reliable and valid benefit transfer equation that other researchers could have used in conducting similar research with far less time, costs, and efforts.

- Limited timeframe and budget to conduct more comprehensive research.

When planning the Codru Quest project, we had envisioned that it would be mainly an experimental one to try implementing economic valuation research, specifically choice modelling technique, on ecosystem services and biodiversity conservation for the first time in Moldova. This is why the entire project was planned to last for a year and use the total budget of about £8000. It was sufficient to realise a project with 11 research expeditions, 19 training sessions delivered, 720 trees planted, 201 respondents surveyed, and valid results estimated and presented to stakeholders. However, a thorough and reliable economic valuation study usually lasts for several years and has far larger budget to account for several pilot tests of the survey, more direct interviewing techniques, and more extensive data analysis. So, the tight timeline and budget of the Codru Quest project imposed certain limitations and constraints on the target population sample size addressed, number of focus group discussions and pilot tests organized, surveying methods used, and generally the research work process, which ultimately affected its results. Nevertheless, it produced valuable outputs, meaningful outcomes, and is currently influencing positive developments in nature conservation in the Codru forest, while also serving as a vital learning experience for us as environmental economists and conservationists.

- Influence of corruption and poverty on the research results.

We identified this issue in the respondents' comments to the survey. Overall, they doubted that the increase in visitor price used as wellbeing measure in the survey would actually go to support positive changes in nature conservation in the Codru Nature reserve and the Codru forest described in the valuation scenario and choice sets. The reason was mainly that Moldovan citizens do not have trust in state agencies because of high level of corruption in them and Moldovan Government in general. Considering this, we have some doubts whether the respondents' answers and WTP expressed truly reflect their willingness to support nature conservation and true value of ecosystem services in the Codru forest. We observed the issue already in the final data analysis, so it was too late to do anything about it. Still, the results and identification of such issue presents an important point to consider and experiment with when doing economic valuation of ecosystem services in a similar developing country with similar corruption challenge as Moldova. It is very likely that we will research the influence of corruption on economic valuation research further

and will publish a separate article on this topic using the Codru Quest project as example.

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

I. Educated youth engaged in environmental research, biodiversity conservation, and reforestation activities in the Codru forest

During the first phase of the Codru Quest project we had succeeded in educating and engaging 37 young people and 101 members of rural communities into its nature conservation activities.

In terms of education, the participants benefitted from a month-long educational programme on the topic of economic, social, and environmental values and importance of ecosystem services and biodiversity on the example of the Codru forest ecosystem. During the programme they experienced guided excursions in the Codru Nature Reserve and the Museum of Nature, interactive workshops both in the Reserve administration building and on the field, and both offline and online training by experienced trainers and environmentalists from our network. The programme was made interactive and engaging by applying the concept and elements of gamification. As means to implement it, we improved and offered them the online environmental gamification platform MEGA Game: The Game with Impact. All the practical tasks for the participants were transformed into online missions (that people nevertheless had to accomplish in real time) with video trainings connected to them for e-learning. All the missions were then linked together in a logical flow of a gamified quest (hence the name of the project, the Codru Quest). Some of the missions and video training can still be accessed in MEGA Game at <http://megagame.megageneration.com>.

The participants' feedback on the programme and gamification used in it was quite positive: 4.87 out of 5.00 is the average score for the content and its relevance, and 4.71 out of 5.00 is the average note for the organisation of the project (from the summary of the on-line post-project evaluation survey). Besides that all of the participants replied that they would like to be informed about the continuation of the Codru Quest or similar projects in the future and would be willing to participate in them.

In brief, positive impact of this outcome is:

- 37 young people and 101 members of rural communities engaged in nature conservation and are willing to continue being active in this domain;
- 19 practical workshops and training on ecosystem services and biodiversity conservation delivered;
- 11 expeditions into the Codru Nature Reserve organised that brought not only learning for the participants, but also updated information and concrete data about the current state of the Codru forest ecosystem and the two targeted endangered species: *Crataegus pentagyna* and *Lucanus cervus*;

- Around 720 new trees planted near the forest to educate the participants on reforestation, start extending the boundaries of the forest, and remediate the degrading soil, which could cause landslides affecting the nearby village.
- MEGA Game: The Game with Impact updated with new features for providing better performance and more value for users during the next project.

II. Willingness to pay of Moldovan citizens for ecosystem services and biodiversity conservation in the Codru forest as a valuable socio-economic-environmental output to cost-benefit analysis, land use planning, and policy making

Raising awareness and education were important components of the Codru Quest project. However, the main focus of it was on economic valuation of ecosystem services and biodiversity conservation in the Codru Nature Reserve and the Codru forest. Such environmental “goods” are not traded on markets, do not have observable market price, like timber has, for example. Therefore they are often not included in decision- and policy-making, making logging and selling of timber economically favourable option. However, the Codru forest brings many more benefits to people and economy, which are not accounted for (carbon sequestration, biodiversity habitat, pollination, fertile soil formation, water purification, recreation, and so on). Accounting these values in easily understood “language” of money and welfare gains was the purpose of the Codru Quest.

To make it happen, we succeeded in conducting the first ever research of economic valuation of ecosystem services with the use of choice modelling technique in Moldova. We tested the pilot choice modelling survey together with 100 participants of the above-mentioned educational programme and then collected valuable information about attitudes towards nature conservation and willingness-to-pay (WTP) for ecosystem services and biodiversity conservation in the Codru forest from 201 respondents (100 from residents of the nearby capital city Chisinau and 101 from village residents living near the forest) with the main survey (available at [https://issuu.com/megageneration/docs/mega - the codru quest - your choic c693af527b6995](https://issuu.com/megageneration/docs/mega_-_the_codru_quest_-_your_choic_c693af527b6995)). As an experiment we also used gamification and MEGA Game to post 5 survey-related missions and collect additional responses in an innovative way.

For the data analysis we teamed up with three young researchers in environmental economics from the University of Copenhagen (Denmark). Together we were able to process large volume of valuation, socio-demographic, and economic data much quicker and more effectively. For the researchers the Codru Quest represented an on-time real-world practice of their knowledge and skills in environmental economics. They also used the case of the Codru Quest in their research article “*Conducting Stated Preference Surveys in Developing Countries: The Choice of an Appropriate Payment Vehicle*” presented at their university. The article is available for reading and downloading here: <https://goo.gl/x6tfM9>.

When the WTP estimates with their explanation, conclusions, and recommendations on how to use them for different stakeholders, we compiled them into the online publication “The Codru Quest: Final Report”. It is available for reading and

downloading at the project website and at <https://issuu.com/megageneration/docs/mega - the codru quest - final repo>.

In sum, positive impact of this outcome is:

- 201 respondents took part in the Codru Quest survey and provided their information on attitudes, preferences, and WTP in relation to the Codru forest;
- Four experiments with the survey conducted, including the pilot testing, on-line surveying, focus groups and face-to-face interviews, and gamification;
- Final report with WTP values of ecosystem services and biodiversity conservation in the Codru forest that can be used in cost-benefit analysis, land use planning, and policy making concerning the forest to add weight to its sustainable management and conservation in the long term;
- Executive Summary of the project results visualised on the Codru Quest website for quick understanding and use;
- Three young researchers gained practice in real-world economic valuation of ecosystem services;
- One unexpected publication on the case of the Codru Quest project released and presented.

III. Publications and materials to be used by stakeholders and in follow-up projects

The results of the Codru Quest project were presented to its main stakeholders, including the Codru Nature Reserve administration; members of the local community, who expressed interest in the project results; Ministry of Environment of Moldova; partner environmental NGOs; and the community of Moldovan expats interested in contributing to the development of their home country. This marked the beginning of our relationships and cooperation-building around biodiversity conservation in the Codru forest with them.

Together with several stakeholders we have already created the first version of the Public Policy Proposal and its action plan with the post-Codru-Quest activities. The Proposal can be viewed here: <https://issuu.com/megageneration/docs/mega - the codru quest - public pol>. It will be used to design a complete project proposal for the Codru Quest II and then to fundraise and attract partners for it.

As economic valuation research, and especially choice modelling technique, is a very new scientific method in Moldova, we decided to use our experience in the Codru Quest and prepare a methodological guidebook on how to conduct such scientific investigations. Entitled "The Codru Quest: Methodology", this publication offers step-by-step instructions on how to use choice modelling for valuing non-market environmental "goods" with examples and lessons learnt from the Codru Quest. The Methodology was written for young environmental economists who have little to no experience in valuation research. It is now available for reading and downloading at the project website and at <https://issuu.com/megageneration/docs/mega - the codru quest - methodolog>. Nowadays we discuss the methodology with the University of Copenhagen, specifically its inclusion as supportive didactic material for their course on Economic

Valuation and Cost-Benefit Analysis at the Master programme in Environmental Economics.

All in all, positive impact of this outcome is:

- We informed the main stakeholders the project results and built promising relations with them;
- We released the Public Policy Proposal in three key languages (English, Romanian, and Russian) and are using it to prepare the Codru Quest II on collaborative governance and sustainable management of the Codru forest ecosystems and biodiversity in them;
- We prepared and published the methodological guideline on conducting economic valuation research with choice modelling technique with practical inputs and examples from our Codru Quest experience.

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

In the Codru Quest we connected with and engaged local communities from the nine villages situated around the Codru Nature Reserve and the Codru forest. These were Lozova, Stejareni, Capriana, Micleuseni, Huzun (Straseni region); Horodca, Bursuc, Dragusenii Noi (Hincesti region), and Condrita (Municipality of Chisinau region). In total, 101 randomly selected members from these communities participated in the educational programme and the main surveying process of the project.

From the educational programme members of the local communities got to know and understood how important are ecosystem services and biodiversity in the nearby Codru forest besides being just a source of timber and non-timber products. They saw the potential of sustainable management of the forest as a unique recreational and touristic place, a historically symbolic natural site in Moldova, and the habitat of charismatic endangered species. The local communities also helped us collect valuable data on the current state of ecosystems and targeted endangered species in the Codru forest, as well as provided insights on their relations with the Codru Nature Reserve administration.

In terms of economic valuation research, the local communities were included only as respondents of the choice modelling survey. Nevertheless, the majority of them were happy to participate and express their WTP, as publishing of its results gave them some “voice” to express their attitude and preferences in relation to nature conservation and management of the forest land and natural resources. In addition, 52% of all village residents surveyed indicated that they would like to be informed about the project results and next steps. Last but not least, one of the Lozova village residents expressed willingness to help us further and be part of the organizing team of the Codru Quest II. She has already connected us with the “primar” (mayor) of Lozova, who expressed his support for the next activities and attempts to involve the local community of his village into nature conservation in the Codru forest.

Until then the final report and visualised executive summary of the Codru Quest project will be shared with the project participants, survey respondents, and other interested local community members when we finish their translation into Romanian and Russian.

5. Are there any plans to continue this work?

Just as the idea of the Codru Quest emerged from the initiative MEGA Impact Championship (www.megaimpact.md) of our organisation, the Codru Quest itself is a beginning of consecutive editions of this project. This is needed, as establishing collaborative governance and sustainable management for effective protection of ecosystem services and biodiversity in the Codru forest is a long process requiring several years of research, negotiations between main stakeholders, and hard work.

The Public Policy Proposal mentioned earlier briefly describes the core idea and concept of the Codru Quest II. The second edition capitalises on the outputs, information, and materials created during the current first edition. However, in the Codru Quest II we will go deeper into researching concrete strategies of protecting and sustainably managing natural assets of the Codru forest, educating main stakeholders and local communities on how to implement the most effective and efficient strategies, and stimulating fruitful negotiations among them.

It will be too early to conduct proper cost-benefit analysis, as we need to research economic values of other attributes of ecosystem services in the forest. At the same time we need to collect more data on the endangered species having the Codru forest as their habitat in order to properly estimate the value and importance of the Codru forest biodiversity. The approach of citizen science stimulated by elements of gamification through MEGA Game will help us achieve that. For MEGA Game to work better than in the first edition, we plan to improve several aspects of its design and functionality, as well as finalise the development of a smartphone app connected to it and relaunch the app again. The new version of the MEGA Game app will use both map-based orientation (available in the current version) and augmented reality (to be developed and implemented) to guide participants through the quest to each mission location, where they could accomplish mission objectives and document the results by using their smartphones (consider this as Pokemon Go! game, but for citizen science and nature conservation).

The contacts of the Codru Nature Reserve administration, local communities, supportive partners, and generous sponsors gathered during the Codru Quest project will be used to secure resources and support needed to implement the activities described above and realise the Codru Quest II. Its draft action plan is already in the discussion and preparation process (currently available only in Romanian at <https://goo.gl/3xi3tD>).

Besides direct work on the Codru Quest II, we will be sharing the results achieved so far through several research articles written on the basis of the Final Report, publications in mass-media, presentations at conferences, and trainings. We already have a number of environmental organizations in Germany and Ukraine and the US

Forestry Service interested in reading and hearing about the results of the project. We expect more organizations to show interest in the Codru Quest further on (judging by the example of this appearance: <http://www.ecomilenio.es/the-codru-quest-el-juego-en-el-que-se-valoran-los-servicios-de-los-ecosistemas/4440>).

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

Activities of dissemination and sharing of the Codru Quest results done so far:

- We have created the webpage of the Codru Quest (<http://megaimpact.md/the-codru-quest>), where we have shared the information about the project, visual summary of its results, and all the materials and publications released during it;
- We have added the Codru Quest publications, including the final report, methodology, and Public Policy Proposal to the publicly accessible MEGA page at Issuu (<https://issuu.com/megageneration>), where people can read and download them;
- We have sent the Final Report, although only in English so far ([https://issuu.com/megageneration/docs/mega - the codru quest - final repo](https://issuu.com/megageneration/docs/mega-the-codru-quest-final-repo)), and the Public Policy Proposal ([https://issuu.com/megageneration/docs/mega - the codru quest - public pol](https://issuu.com/megageneration/docs/mega-the-codru-quest-public-pol)) to the partners and main stakeholders of the project;
- We have sent the methodology ([https://issuu.com/megageneration/docs/mega - the codru quest - methodolog](https://issuu.com/megageneration/docs/mega-the-codru-quest-methodolog)) to our contact person at the University of Copenhagen, who is the professor of the course on Economic Valuation and Cost-Benefit Analysis;
- We have shared stories about the realisation process of the project and its results on the MEGA blog (<http://blog.megageneration.com/tag/the-codru-quest>) and in the MEGA newsletter sent to our subscribers and followers;
- We have also informed the subscribers and followers of MEGA about the Codru Quest and its outcomes through the organization's Facebook (<https://www.facebook.com/mega.md>) and Twitter (<https://twitter.com/megamoldova>) accounts.

Results communication activities planned to be done in the nearest future:

- Organisation of a public meeting with the partners and the main stakeholders to acknowledge their contribution and support for the Codru Quest project and present them its results;
- Organisation of a separate meeting with the representatives of the Codru Nature Reserve administration, local communities, Ministry of Environment, and state agency Moldsilva to discuss the results and agree upon next steps;
- Writing and publishing three research articles based on the final report and methodology on such topics as perception of the payment vehicle choice in an economic valuation study conducted in a developing country, use of gamification in stated preference studies, and economic valuation of indirect use and non-use values of ecosystem services and biodiversity conservation in the Codru forest;

- Integration of the project results and lessons learnt into the educational programme / course planned to be delivered to the main stakeholders as part of the Codru Quest II;
- Sharing on the project results through our partner mass-media channels.

7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?

Since the receipt of the grant award letter and the grant funds in September 2016, we have used them consecutively for the period of exactly 12 months (till the 1st September 2017). This is the duration of the project planned from the beginning.

However, comparing to the exact dates stated in the project application form (May 2016 – May 2017), there was definitely a delay at the beginning of its realisation due to challenges in finding partners and sponsors, and in the last months of it due to some of the difficulties described earlier. What also affected the delay in the end was the decision to prepare an additional publication, the methodology ([https://issuu.com/megageneration/docs/mega - the codru quest - _methodolog](https://issuu.com/megageneration/docs/mega_-_the_codru_quest_-_methodolog)). It was not considered during the preparation of the Codru Quest proposal and application. Nevertheless, while doing research work, we had experienced difficulties in using existing literature sources on the choice modelling technique. Therefore, to ease the job of other young environmental economists, we had agreed to create a methodological guideline on the basis of the literature reviewed and our own experience and lessons learnt. Although such a decision came with additional hard work, seeing its result and the attention to it now makes us certain of the correctness of the decision taken.

In relation to the use of grant funds, a significant share of them was invested into organisation of the project opening and presentation event, expeditions, on-the-field research, trainings, workshops, focus groups, and pilot survey testing at the beginning of the project period (autumn 2016). This was followed by a period (winter 2016), when not much spending was done, as during it we only worked on processing research information, analysing preliminary data, improving the survey design, and preparing for the next research phase. The second peak of spending was at the end of the project (Spring – Summer 2017), when we conducted the main surveying and data analysis work. To make it happen within the timeframe we hired a marketing research company to do computer-assisted personal interviews (CAPI) in the nine target villages, while we focused mostly on another subgroup of respondents, city residents. This approach turned out to be quite successful, as we succeeded in covering the required sample size and processing it quite fast.

There were several changes in how grant funds had been spent throughout the project timeline (described below). But overall the investment of funds into the project activities was done as expected initially, according to its action plan.

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. 1 £ sterling = 23.32 Moldovan Lei

(The budget below represents only the expenditures from the RSG funds)

Item	Budgeted Amount	Actual Amount	Difference	Comments
Remuneration for the project implementer (Alexandr Iscenco), 12 months, part-time	1065	1057	9	The remuneration was calculated according to the part-time medium salary for a researcher in Moldova (which is quite low compared to developed countries). The amount paid almost perfectly matched the estimated remuneration value.
Remuneration for the project human resources coordinator (Elena Ungureanu), 12 months, part-time	1065	1057	9	
Travel to the Codru protected area, 4 return trips: 2 only for the project team and 2 together with the project participants	240	107	133	We made a total of 11 expeditions to the Codru Nature Reserve and the forest. Some of them were combined into single trips, thus saving on transport costs. Others were done by local transport, which is quite cheap in Moldova.
Per diem during 4 trips to the Codru protected area (breakfast, lunch, and dinner)	260	528	-268	Originally we estimated per diem only for 2 people, the project team members. However, considering that we involved extra participants from the city and members from local communities, we had to provide them some meals during trainings and expeditions. Therefore the expenses here were much more than we had originally planned.
License for survey management tool for 200 respondents for 2 months	50	1166	-1116	We used software management and data analysis software for free due to collaboration with the researchers from the University of Copenhagen. However, to succeed in interviewing a sample of 100 village residents, we had to hire a marketing research company that charged about 6 £

				sterling per CAPI per person.
Software development service for 2 additional features for MEGA Game necessary for the Codru Quest	1200	151	1049	We managed to finance the MEGA Game development costs from our organization from additional funds attracted to its budget. However, we did not expect an additional 20% tax (151.45 £ sterling) on the "import" of software development services, which we had to pay.
Hosting of MEGA Game platform on Microsoft Azure for 12 months	312	267	45	The MEGA Game platform was not used during the entire period of 12 months. It was active only during peak project times at the beginning of the project and during the survey testing and main survey periods. This allowed us to save a bit on the hosting costs.
Domain for the Codru Quest landing page for 12 months	36	64	-28	The price for the www.megaimpact.md domain turned out to be a bit more expensive than we had expected.
Web development service for the Codru Quest interactive landing page	450	332	118	We used a reliable and trustworthy website development company Rivos Tech for creating the Codru Quest website. We were able to negotiate a good discount on their services due to the fact that we had benefitted from such services from them in the past projects.
Renting of training space for 2 days for trainings and scenario workshops	200	133	67	We were lucky to obtain the support of the Ministry of Environment to organize trainings and events in the Codru Nature Reserve administration building for free. However, it was not always available, so some of the funds we had to spend on renting a training space in the city.
Coffee breaks during 2 days during trainings and scenario workshops	60	43	17	For coffee breaks we used the coffee machine of our organization and some tea and snacks from the owners of trainings space we had rented. So, we were able to save a bit on

				the coffee breaks costs.
Mobile phone communication costs for 12 months	24	46	-22	Although we communicated mainly on-line, we still had to use mobile phone for calling the participants and local community members during the events, trainings, and expeditions to organize them. This resulted in a bit higher communication costs.
Bank and transaction fees related to financial management of the project for 12 months	36	40	-5	There was slight overestimation of the bank and transaction costs. The number of financial transactions to be done was a bit higher than we had assumed.
Total	4998	4992	6	The RSG funds were used almost completely, with just a small positive net balance. In the majority of cost categories there were cost savings due to partnerships created and additional funds attracted. In 5 categories the actual expenses exceeded the planned ones due to changed project-related needs, but they were covered from cost-savings in other budget categories.

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

1. Translate the final report into Romanian and Russian and sharing it with the main stakeholders of the project;
2. Organise public and individual meetings with partners and main stakeholders to present them the project results and discuss collaborative next steps;
3. Publish and share the planned research articles written on the basis of the final report and methodology;
4. Integrate the methodology in to the curriculum of the course on Economic Valuation and Cost-benefit Analysis at the University of Copenhagen;
5. Reconnect with previous project participants, engage additional interested people, and assemble the Codru Quest II team;
6. Finalise the action plan and elaborate the complete project proposal for the Codru Quest II;
7. Initiate partnership building and fundraising for the Codru Quest II;
8. Prepare the action plan, content, and materials for the educational programme / course on the importance and values of ecosystem services and biodiversity on the case of the Codru forest;
9. Improve the design and functionality of both versions of MEGA Game: web platform and smartphone app;

10. Test and prepare the MEGA Game platform and app for the Codru Quest II.

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

The Rufford Foundation logo and acknowledgement of the support offered was used in all materials and publications of the Codru Quest, including:

- The official project website: <http://megaimpact.md/partners-and-friends>;
- The website of the organization MEGA: <http://megageneration.com/partners>
- Articles on the MEGA blog, for example: <http://blog.megageneration.com/take-part-in-the-first-research-on-forest-ecosystem-services-in-moldova>;
- Facebook page of the organization MEGA: <https://www.facebook.com/mega.md/photos/a.291057424330592.46314.290778884358446/789025941200402/?type=3&theater>;
- Presentations and training materials shown to the participants, for example: <https://goo.gl/DNoufm>;
- Certificates given to the partners and participants of Phase I of the project: <https://goo.gl/c8rsyC>;
- Online and offline surveys offered to the respondents, for example: [https://issuu.com/megageneration/docs/mega - the codru quest - your choice c693af527b6995](https://issuu.com/megageneration/docs/mega_-_the_codru_quest_-_your_choice_c693af527b6995);
- Publications, such as the final report ([https://issuu.com/megageneration/docs/mega - the codru quest - final repo](https://issuu.com/megageneration/docs/mega_-_the_codru_quest_-_final_repo)), methodology ([https://issuu.com/megageneration/docs/mega - the codru quest - methodolog](https://issuu.com/megageneration/docs/mega_-_the_codru_quest_-_methodolog)), and Public Policy Proposal ([https://issuu.com/megageneration/docs/mega - the codru quest - public pol](https://issuu.com/megageneration/docs/mega_-_the_codru_quest_-_public_pol));
- Visual executive summary of the final report: <https://www.slideshare.net/MEGAGeneration/mega-the-codru-quest-final-report-eng>

Additionally the Codru Quest and the Rufford Foundation as its supporter were mentioned in several other online sources, such as this one: <http://www.ecomilenio.es/the-codru-quest-el-juego-en-el-que-se-valoran-los-servicios-de-los-ecosistemas/4440>.

11. Any other comments?

We, Alexandr Iscenco and Elena Ungureanu, are grateful to you for supporting the Codru Quest project and allowing us to focus on the research work, education, and community engagement instead of trying to find the necessary funds for their implementation. Because of your kind support we have successfully achieved the outcomes described earlier and have laid solid foundation for the continuation of the project with the potential of greater positive impact further on.

If you are interested in the results and further developments of the Codru Quest and would like to support its second edition, we will be happy to apply for the 2nd Rufford Small Grant next year, as it is described in the RSG Guidelines for Applicants.

Till then we wish you MEGA great success and inspiring reports from other supported projects!

