FEASIBILITY OF RAPID ETHICAL ASSESSMENT FOR THE ETHIOPIAN HEALTH RESEARCH ETHICS REVIEW SYSTEM

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ABSTRACT

One of the challenges in the process of ethical medical research in developing countries, including Ethiopia, is translating universal principles of medical ethics into appropriate informed consent documents and their implementation. Rapid Ethical Assessment (REA) has been suggested as a feasible approach to meet this application gap. In the past few years REA has been employed in few research project in Ethiopia and have been found to be a useful and practical approach. Feasibility assessment of REA for the Ethiopian research setting was conducted between 2012-2013 in order to inform the subsequent introduction of REA into research ethics review and governance system in the country. REA was found to be an appropriate, relevant and feasible venture. We argue that REA can be integrated as part of the ethics review and governance system in Ethiopia. REA tools and techniques are considered relevant and acceptable to the Ethiopian research community, with few practical challenges anticipated in their implementation. REA are considered feasible for integration in the Ethiopian ethics review system.

Key words: Rapid Ethical Assessment, Feasibility, Research Ethics, Ethiopia

INTRODUCTION

The inflexible use of international ethical guidelines in health research have prompted investigators to seek an approach for adapting these guidelines to local situations. Studies have emphasized the importance of addressing local context, especially in the developing world where there is a disconnection between what is assumed by researchers and the practical reality [1-3]. Rapid assessment techniques have been documented to play important role in improving research consent process in developing countries by understanding and addressing contexts. One of those approaches suggested for further use is named as Rapid Ethical Assessment or Appraisal (REA) [4-7]. Rapid Ethical Assessment (REA) is a brief qualitative intervention designed to map the ethical terrain of the research setting preferably prior to a research team starts recruiting participants with the purpose of connecting ethical principles to contexts and realities on the ground. REA attempts to discover, describe and respond to the ethical issues specific to a particular research setting, and as such should help researchers to address the issues that genuinely matter to proposed study participants and their community. The assessment is conducted among key stakeholders to inform the design of the particular research project. Its findings are utilised to inform and guide the research consent process; ranging from the conception and development of the consent form, to the way consent is obtained. REA as a methodology employs constellation of action research, rapid assessment and ethnography. This makes the approach a multi-mix, multi-disciplinary approach with overlaps between various techniques. REA employs an ethnographic qualitative design with a blend of anthropologic ethnographic enquiry, action research and rapid assessment techniques (4-7). REA were serially piloted in Ethiopia. During these rounds of interventions the feasibility of REA for integration into the current research ethics review and governance system was assessed. In this paper we summarise the key findings from the REA intervention employed so far in Ethiopia and key considerations for integrating REA in to the ethics governance in Ethiopia.

MATERIALS AND METHODS

Feasibility assessment on REA in the Ethiopian context was conducted based on REA piloted in to three different community based studies in to five loca-
tions in Ethiopia, in 2012-2013. The locations were Ayra in Eastern Ethiopia, Soddo and Butajira in Southern Ethiopia, Mekele Zuria from Northern Ethiopia, and Zeway from South Central Ethiopia (Figure 1). During the pilots, observations and documentations of REA implementation processes were done. This was preceded by an acceptability assessment where researchers, ethics review committee members and policy makers from academic institutions such as Addis Ababa University (AAU), Jimma University (JU), Ethiopian Health and Nutrition Institute (EHNRI), University of Gondar (UoG) were interviewed. In addition two REA workshops were conducted among researchers to collect feedback about REA. (Figure 1)

![Map of Ethiopia](image)

**Figure 1.** The five REA Pilot locations in Ethiopia, 2012/2013.

Based on data from the different phases of the REA project, feasibility analysis was conducted to determine feasibility in terms of time, cost and skill were assessed to answer the following question; how much does REA cost? what skills are needed? are the skills transferable? who will conduct the REA, the researcher or another expert? Is REA acceptable to researchers? Is it possible to integrate the tool into existing research ethics appraisal systems? Is it user-friendly and cost effective?

We explored how REA might be integrated into the existing research governance and ethical review system based on opinions from researchers and research ethics stakeholders, our observations and documentation of how the REA fitted into the pilot research projects, and the reflections and feedback from REA workshop participants. Thematic analysis of qualitative data based on cycles of coding were conducted. We then triangulated findings from all three phases of the project to identify relevant themes related to the various components of feasibility. Transcripts, memos and summaries of interviews, discussions and observations were coded to identify patterns and emerging themes in line with the variables of interest. Following the coding of responses using themes, we categorized and synthesized the results thematically. Thematic variables used to measure the various components of feasibility included attitude and perception about REA, satisfaction with REA, suitability of REA, perceived demand and expressed intent to use REA, actual use of REA, expertise and resources needed and available for REA (such as time, financial costs, human resources), training and skills needed, efficiency of implementation in terms of adaptability and flexibility; accommodation of the tool into the system and scalability.

### RESULTS

REA feasibility results are presented in three categories; its acceptability to intended end-users; practicality in its implementation; and dynamics of its integration into the current system and potentials for further expansion.

**Acceptability of REA to intended users:** The researchers who were interviewed generally had positive perceptions about REA and thought this is a useful approach. Their main concern however was the practicality of the REA approach. As conducting a rapid qualitative study to improve consent process is a new concept, many had to ask more to learn before understanding it.

Researchers who employed REA were happy with the outcomes of the REA process and appreciated the experience. They expressed their appreciation and satisfaction with the feedback they obtained for the consent processes of their studies. REA workshop participants appreciated the relevance of REA and the descriptions and illustrations used. They were very excited to learn about this new technique and expressed interests to know more in due course. Participants also said that the tools appear to suitably address very important aspect of research in low income settings.
Researchers and ethics committee members interviewed appreciated the contribution of REA towards improving the standards of medical research. They appreciated the fact that REA creates a good opportunity for researchers to understand their research community in relation to the research process and particularly the consent process. Respondents expressed general acceptance towards REA and considered the principles governing REA and its application to be similar to the principles behind pre-test studies conducted before the actual studies.

If the participants understood [the community] well, this will simplify the process of research. I think it is a very good idea. ... Especially in Ethiopia and [other] developing countries, [where] there are diverse cultures, lot of surprises will be there waiting for you [in the community], so I think it is a good idea. This can [even] be included in the guideline(s).

[Academician and Researcher, AAU]

REA respondents expressed their concerns that some researchers might resist REA as a mainstream tool. Possible reasons included the additional work burden that it might result, and not being able to understand its benefits fully. This was considered especially important in the early stages of introducing REA. Introducing REA as a pre-requisite for ethical appraisal and as a mandatory requirement without adequate awareness and background work might be very unpopular. Accordingly, training and awareness raising were considered vital along with continued negotiation and demonstration of the benefits of REA.

Putting it (REA) as a [mandatory] requirement might bring resistance among researchers...[just] because it is a new thing. People resist new things because of lack of knowledge. So it should be done slowly, showing it in other studies, showing its benefit. When they see the benefits, if one study is done properly it will be a base for another study, it will be like that. Eventually it will grow slowly as a culture (among researchers). [Academician and researcher, AAU]

During discussions with researchers about REA, there was a lot of confusion regarding the term 'rapid ethical assessment'. Many thought this meant a tool to speedily address the ethical approval process. It took considerable discussion to clarify this. REA workshop participants initially misunderstood the term 'Rapid Ethical Assessment'. As many researchers are frustrated with the current very protracted ethical appraisal process, they thought this tool was intended to speed up the review process and were surprised to learn that REA involves addition of a step or process. When they heard more and got more informed, they were not disappointed, but appreciated the importance of this new tool and considered using it despite the demands it creates on researchers. Overall, researchers approached for this assessment expressed concerns that REA might be an additional burden to researchers in terms of time and budget. Other respondents stressed the need for awareness raising and training on REA. Some were concerned about too much involvement with the community before the actual data collection might bring about contamination of the instrument and measurement bias during the field research.

Practicality of REA in its Implementation Process:
It was mentioned that REA might become an additional burden both to the individual researcher and the research governance system (including ethical review) due to the additional pressure and burden on the researcher by increasing the process and steps of research and increased complexity of the review process.

This (REA) will increase the bureaucracy and make the process long, and it complicates the ethical process .... I don’t think we need another body for this. No need of additional review. It will increase the time [needed for the review]. Then you have to pass [through] all this to start working. It lengthens the steps. As you make it more organizational, it will increase the complexity specially in our environment which is already bureaucratic. It is bureaucratic in [responding]. [As] the capacity level is low, they (the review systems) need to be [first] strengthened. [IRB member and researcher, EHNRI]

Respondents felt that applicability would depend on the type of research under consideration. To introduce REA not in blanket fashion for all research, but only for selected type of research projects based on criteria such as risk level and anticipated ethical issues (e.g. community-based research, invasive procedures, biological specimens involved) appeared more sensible.

It depends up on the research question, ... so if there was a check list ... based on the research question... like clinical trial, ... sensitive issues, like genetic studies, in remote areas, vulnerable population.

[IRB member and researcher, AAU]

Others suggested that it would be difficult to introduce REA based on the research-type, risk and harm levels, as it would be difficult to foresee risks in research. To address this dilemma, an all-inclusive approach of national REA was suggested.
It will be better if it is not like that, it is hard to classify research a priori, which one does harm. It is hard to decide in the beginning. It is hard to predict what research could do to the society, you can't say “let me do formative [REA] for this one and not for this one”.

[IRB member and Researcher, JU]

This refers to doing a 'one-off' REA at the national level to map out all possible ethical issues at the national level for subsequent use by researchers. This point is further presented in detail under the section on integration below.

Instead of doing REA for every study separately, it was suggested that REA be done at a national level to map out existing ethical considerations in the various ethnic and cultural groups. Then the issues and recommendations could be included in a national document as a guideline (catalogue) researchers could use this information as a reference for research in a specific setting.

Instead of doing a formative assessment (REA) for all research which is tedious, there should be a guideline (guiding document). You can do a [national] survey (REA), and put it on the guideline, saying this is the Ethiopian community [and], if you want to get a signed consent you should do like this [depending on the site]. Otherwise if you come to [do REA in] all research, one it might be different what each researcher will bring (find), [and] there might be conflicting outcome, the formative [REA findings] that you bring (find) is (could be) different from what another person might bring, there might not be a common ground. [IRB, Researcher and academician, JU]

According to the respondents, important resource considerations included time and cost. It was stressed by participants that the approach is resource-intensive and may not be practical time-wise. Considering time as an important factor, there was a dilemma about how much time is enough to be allocated. The issue of cost and the implication of additional cost needs for REA was mentioned. Most local research projects operate under meagre budgets, and REA will be another competing factor for the budget available. During the REA pilot studies, we documented resource inputs required for REA implementation.

It needs a lot of resource [including] time. When we start a research, there are deadlines and time constraints. To study exhaustively we need time, so it depends on resource and time. If the area is far, it is hard to go there and do it and come. Making it as a requirement is a little hard. [Academician and researcher, AAU]

Costing: In the REA pilot studies, the budget planning took into consideration line items such as personnel costs, transportation and field instrument as well as data management and analysis costs. Average costing per REA amounted to 42,812.5 Ethiopian Birr (ETB) (approximately £1500 or 2250 USD). This excludes the costs of other items which were not directly paid for such as IT equipments and software. Compared to field research budgets of the individual research projects, the REA cost ranged from 1.92% in Adami-Tulu (Zeway) to 4.99 % in both Ayra and Soddo. The overall details of field costs of the four different locations are presented in Table 1.

<table>
<thead>
<tr>
<th>Site</th>
<th>Parent project research cost estimates</th>
<th>Proportion of cost of REA* against project cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ETB</td>
<td>USD</td>
</tr>
<tr>
<td>Butajira</td>
<td>748,850</td>
<td>39,413</td>
</tr>
<tr>
<td>Adami Tulu</td>
<td>2,233,000</td>
<td>117,526</td>
</tr>
<tr>
<td>Ayra</td>
<td>856,662.5</td>
<td>45,087</td>
</tr>
<tr>
<td>Soddo</td>
<td>856,662.5</td>
<td>45,087</td>
</tr>
</tbody>
</table>

* Average cost per REA ~ 42,812.5 ETB
**Time:** This took into account the time needed per project for planning (preparation for field work) and implementation (time in the field). Each of the days spent on the field were longer than normal working days (on average, 12 hours a day spent on field work and analysis.

Overall, the average time range for REA was 4 to 6 weeks (including initial analysis); 3-5 weeks for the data collection and field work, and one week to compile the summary findings and communicate back to the researcher (Table 2).

### Table 2 Time taken by REA Field Work for five REA pilot sites, 2012-2013

<table>
<thead>
<tr>
<th>Site</th>
<th>Time Period</th>
<th>Total Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butajira</td>
<td>November/December, 2012</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Adamu Tulu</td>
<td>January/March, 2013</td>
<td>5 weeks</td>
</tr>
<tr>
<td>Wollega</td>
<td>Mid March/April, 2013</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Soddo</td>
<td>Mid April/May, 2013</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Mekele</td>
<td>July/August, 2013</td>
<td>4 weeks</td>
</tr>
</tbody>
</table>

**Manpower:** Manpower needed for REA included the REA team and its technical expertise. The profile of personnel involved in terms of professional expertise and other characteristics for each pilot project and field sites are presented below (Table 3).

### Table 3. REA team composition (number and expertise) for the different REA pilot sites, 2012-2013

<table>
<thead>
<tr>
<th>Project</th>
<th>No of REA team members</th>
<th>Team Composition and Expertise (#)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butajira</td>
<td>5</td>
<td>Anthropologist (1); Public Health professional (2); Expert insiders (2)</td>
</tr>
<tr>
<td>Adami-Tulu</td>
<td>5</td>
<td>Health professional and PI (1); Public Health Professional (2); Anthropologist (1); Expert Insider (1):</td>
</tr>
<tr>
<td>Ayra</td>
<td>5</td>
<td>Anthropologist (1); Public Health professional (2); Expert Insider (1); PI of the Cervical Cancer Project (1)</td>
</tr>
<tr>
<td>Soddo</td>
<td>5</td>
<td>Anthropologist (1); Public Health professional (2); Expert Insider (1); PI of the Cervical Cancer Project (1)</td>
</tr>
<tr>
<td>Adigdom</td>
<td>5</td>
<td>Anthropologist (1); Public Health professional (2); Expert Insider (1); PI of the Cervical Cancer Project (1)</td>
</tr>
</tbody>
</table>

1 USD ~ 19 ETB ; 1 GBP ~ 28.5 ETB

Refers to the research into which the REA is to be employed.
**Feasibility of Integrating REA to Existing System:**
Study respondents considered the process of REA integration to be a time-taking process. To this effect, integration was thought to happen at two levels: a) integration with the research project to be conducted; and b) integration into the existing ethics system and guidelines.

As part of integrating REA into individual research projects, it was recommended to integrate REA into pre-test phases of research. REA and pre-test studies were thought to share similar principles in improving the implementation of research during field data collection. Integrating REA to the main study would simplify the issue of ethical clearance for REA component of the project as the REA would be approved together.

*Integrating it (REA) to the pre-test phases is better than doing it alone. It will also save time. Because whatever you do, you test it on the pre-test and it will be an input when you do your main study. I think this will be good. When clinical trial is done, ... they do the background (pilot) study. I think this thing is already there. ... you need to add this in there... carrying it out at the pre-test or pilot time is good. Because it is( it gets) already approved [together].* [Academician and researcher, AAU]

When it comes to system integration, it was mentioned repeatedly that REA needs to be mainstreamed and should be part of the existing guidelines for research and ethical governance. The country circumstances in terms of ethno-cultural diversity to be taken into consideration, as a justification for including it in the guideline. While it is possible to include REA in the guidelines, this would need to be accompanied by continuous capacity building and training.

*This (REA) can be included in the guideline, ... adding it (REA) to the guideline allows them [researchers] to think about it ... [and include it in their protocol] ... but ... do they see the guideline? The most important things are ... continuous trainings for investigators.* [Academician and researcher, AAU]

However, mainstreaming REA into the current research governance system is not an easy process. Caution in application was advised in order to keep the approach as simple as possible. Participants expressed the need for more workshops as a means for dissemination and expansion of REA to wider audiences.

*Research is premature in Ethiopia. What I suggest is if we simplify this (the REA introduction process) and help the researchers, and protect the society.* [Researcher and academician, JU]

**DISCUSSION**

Based on the feasibility analysis, practical issues and considerations in applying REA for further use in the Ethiopian setting were identified. REA implementation appears feasible, yet some areas require caution and must be addressed in parallel. According to models suggested by researchers who have conducted feasibility assessment in public health interventions, three general categories are considered important [8][9].

**End-user related feasibility:** Potential end-users of REA are researchers, ethics committee members and REA team members. There are two levels of acceptance by end-users, the first one concerns perceptions and attitudes towards the REA, while the second level is more practical where end-users agree to use it. Researchers and ethics committee members acknowledged the need for REA as an approach which would address these gaps. Acceptability is expressed through user's perspectives and perceptions; how do researchers, the REA team and the wider research ethics community accept the tool.

Since REA is a very new approach, concerns about potential resistance were expressed. According to Rogers' theory on "diffusion and adoption of innovation", the rate at which a new approach diffuses for use by its users depends on the nature of the end-users [10]. While only a few will adopt the innovation immediately, the majority take time. A few will never adopt the new technology at any cost. While it is too early to appreciate the whole dynamics of REA acceptance by its end users, the model is worth considering [11]. The other reasons for resistance include practicality, the potential cost and time burdens and researchers’ perceptions about the current ethical approval system. Despite this, the pilots showed that researchers could actually engage with REA and integrate it into their research project. This was chiefly because researchers were convinced in the added value of REA in improving the consent process and increasing the quality of the research process.

**Process-related feasibility:** Implementation of an intervention is a continuous process which starts with planning and making sure what is planned is exe-
It was possible to conduct REA at a reasonable cost of 42,815.5 Birr per REA. In view of the benefits one gets from the REA, the budget it consumes seems reasonable. Several factors might have contributed in attaining this reasonable cost. We tended to be conservative in expenditure and negotiated minimum possible pricings for items and personnel. Though the REA costs were covered by a separate budget, when we compared the ratio of budget spent for each REA, this ranged between 1.92% and 5.72% of the overall budget allocated for the parent research projects. Researchers need to plan well in advance to cater for the budget needs, by considering REA as part of the overall research proposal and accordingly budget for it part of the main research project.

On average it took 4-6 weeks to conduct REA. Rapid assessments are generally considered to be conducted in an average of 6 weeks [2]. Previous researchers have conducted REA in range of 5 to 7 weeks [6] [7]. Despite such short durations, very useful findings were generated. This may convince end-users that REA can generate useful results in a reasonably short period of time. Considering the fact that researchers may spend weeks or months waiting for ethical review [12], planning a 6 week REA does not seem unrealistic.

Regarding manpower, the average number of professionals needed was 5 per REA team. The number was reasonable and manageable as a group for creating a group dynamics. In rapid assessments it is recommended that the team need not be big in number [2]. In rapid ethnography, it is recommended that the rapid process is augmented by involvement of a mix of professionals who have a good team dynamics. It was possible to implement this in our pilot REAs. The REA team was composed of a mix of individuals from different disciplines as well as members from the study area who were considered to be key informants and were in some sense ‘gate-keepers’ to the community during the field work. The social scientist member had the role in making sure that the qualitative designs were properly done, and advised the whole REA process. Health professionals helped the team in exploring the health issues in the research and their public health and clinical implications. The outsiders brought new issues to the community, while insiders helped in balancing views and avoiding assumptions from outside [2]. It was possible to train other experts to do REA and to transfer REA skills and expertise into the pool of identified personnel.

The flexible and adjustable nature of REA helped meeting practical challenges in the process of implementation throughout the phases of pilots. During the field survey, some of the challenges of implementation which required adaptation included timing and duration. During analysis of REA findings, the provision for iterative analysis and daily-debriefings helped a lot in providing usable results for researchers on time. Important considerations regarding communication of feedback were timing (when to disclose information - during, before or after the actual survey) and format (written or verbal). There was room for flexibility in choosing from the stated options.

**System-related Feasibility:** The integration of REA into the existing system depends on a number of factors. All feasibility considerations discussed earlier such as acceptability and applicability are important considerations for integration, as integration is a process rather than a one-off event. New approaches pass through a number of phases and steps before they fully integrate into routine practice [13]. Suggestions given as to make effective ways of charting the integration of REA included integrating REA into the pre-test phases of studies; including REA in the National Research Ethics guidelines; and conducting a National Survey of ethical issues using REA.

Most research project have a pre-test phase to check the tools and make revisions and adjustments accordingly[14, 15]. REA and pre-test would share the principle of adjusting the tool and the process based on field experiences. However they have two distinct and separate objectives and would be difficult put them together. Though the duration of pre-test studies may vary from project to project, they are mostly completed in a couple of days. Whereas REA needs an average of 4-6 weeks depending on the circumstances in the field. Pre-tests are conducted in a population other than the actual population but with some shared similarity to avoid contamination, while REA studies are conducted in the population to be included in the main study, with focus on the ethno-cultural and ethical issues related to the actual target population.

Development of REA to the level of national guidelines is a process that takes time. Issues eligible for inclusion in national guidelines require awareness raising and advocacy, a series of workshops and finally buy-in from a higher governing body at na-
As part of introducing REA for national usage, a ‘national REA’ was suggested as a one-off ethnographic survey in all the ethno-cultural pockets in Ethiopia with the objective of mapping out ethical issues. The results would be collected for reference for future studies. This was thought to be more feasible and cost-effective approach, than prescribing REA for every study. The suggestion was made with the assumption that the ethical issues identified for one piece of research could be reasonably applied to another. Such multi-sited approaches have been suggested and discussed by other researchers [19, 20]. However, contexts and realities are not static and the same is true with ethical issues associated with them, weakening arguments for this approach. In addition, assessing ethical issues in the absence of a planned research project is far from ideal. Ethical issues are a function of settings as well as the research question and study design being proposed. Based on experiences so far, REA discloses ‘unexpected’ ethical issues related to a specific project. Thus, merely studying the context will not be enough. REAs are done in the reality of the setting and the issues and not in general terms. Earlier work has also indicated drawbacks of such approaches [20]. On the other hand conducting national REA would be a hugely expensive exercise and time-consuming, whose findings would be severely limited. Project-specific REAs will definitely be of use to the proposed project, leaving the question of which projects should be preceded by REA.

**Limitations:** In documenting feasibility outcomes we relied on outcome measurement in the absence of comparison groups. Cost-feasibility and cost-effectiveness studies that employ economic models and cost-effectiveness analysis were beyond the scope of the current project.

**Conclusions:** Based on the findings, application of the REA tool and its integration into the existing research governance system in Ethiopia appears feasible. However some practical concerns will need to be addressed in parallel. There is a good level of recognition and acceptability of REA by its end users; researchers and ethics community. REA is flexible and adaptable to circumstances, settings and needs. The resources needed for REA are not different from most research and with proper planning and trans-disciplinary collaboration it should be possible to implement REA in research projects conducted in Ethiopia. REA results were conveyed to researchers in a reasonably short period and were feasible.

It was possible to demonstrate the potential to integrate REA into the current research review and governance system at two levels; within individual research project; and into the existing research governance system. Integration within research proposals has the advantages of an integrated review and efficiency in planning and resource management. Acceptability and practical feasibility of the approach, cost-effectiveness and flexibility for easy adoption, all contribute as key factors for successful integration. Integration with pre-tests seems unrealistic as the two have distinct and separate objectives, timings and settings.

However, concerns remain that REA might place additional burdens on researchers and the research governance system. Main issues identified were time and budget constraints, ‘contamination’ related to the data collection instrument, the flexibility in modifying the consent form in the field might affect the quality and standards of the IRB approved consent forms and procedures. Creating understanding about REA is not automatic and many potential stakeholders had misunderstandings and unworkable expectations. Conducting national REA to generate a national ‘catalogue’ of ethical issues also appears unrealistic as it would be very expensive and its findings would not reflect the unique dilemmas related to individual projects.

Recommendations are made in three areas: a) Continuous awareness raising through workshops for researchers, research ethics committees and regulators, with the aim to promote REA and its use. In addition the researchers there is need to design a mechanism to involve data collectors and field work-
ers in the conduct of REA. b) It is advised to follow a differentiated approach to develop criteria for projects requiring REA than a more general one as projects have their own peculiarities. There is a need to guide researchers opting to use REA in relation to the resource and skill needs and the planning considerations so as to have a practical financial and time budgeting. The costing need to be made based on the realistic market for the listed items, with an adequate time and man power allocated. As much as possible the REA plan need to be integrated into the initial research proposal development. As part of wider use the model of implementation where REA is an integral part of the research project is to be further pursued. There is a need to further document resource feasibility of REA with a cost-benefit analysis. c) For wider implementation, documented guidelines in applying REA need to be developed. In preparation for wide scale application continue working on awareness and capacity building of various stakeholders at institutional and policy levels.

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