TOPIC 1
TYPES OF REPORTS

A. **WHAT IS A REPORT?**

B. **TYPES OF REPORTS:**

   (a) Feasibility reports

   (b) Market Survey

   (c) Diagnostic surveys

   (d) Research (Scientific) reports

   (e) Proposals

   (f) Student Project reports:-

       (i) BSc (undergraduate project)

       (ii) MSc (graduate Dissertation reports)

       (iii) PhD (graduate Thesis)

   (g) Others

C. **What is a Feasibility report?**

This is a formal document for management use. It must be brief enough and sufficiently non technical to be understandable by high level management. There is no standard or formal format for the preparation of feasibility report.

Analysts usually decide on a format that suits particular user and system.

The primary objectives of a feasibility report is to inform about the following matters:

1. What the proposed system will achieve.

2. Who will be involved in operating the proposed system in the organization.

3. The benefits that system will give.
4. The organizational changes needs for its successful implementation.
5. The estimated cost of the system.

All these are given in technical and simple language and the beginning of the report as an executive summary.
It is followed by the detail feasibility report which contains the following items.

In simple words the feasibility study can be defined as the preliminary study that is being conducted to examine whether a certain project is capable of being done in a practical and useful way or in another words in an efficient and effective way, and the outcome of this study helps in the decision whether to proceed with the project or not. If we examine from another angle there is another objective behind the feasibility study and i.e. what possible problems that can occur during the project and based on this analysis some best possible alternative solutions are designed and recommendation on the best alternative solution is also formed. A standard feasibility study may include following feasibility studies.
(1) Economic feasibility study.
(2) Technical feasibility study.
(3) Marketing feasibility study.
(4) Cultural feasibility study.
(5) Legal feasibility study.
(6) Schedule feasibility study.
(7) Organizational feasibility study.

D. What is a proposal?

A **project proposal** is a detailed description of a series of activities aimed at solving a certain problem. The proposal should contain a detailed explanation of the:

☞justification of the project;

☞activities and implementation timeline;

☞methodology; and

☞human, material and financial resources required.

The project proposal should be a detailed and directed manifestation of the project design. It is a means of presenting the project to the outside world in a format that is immediately recognised and accepted. A research proposal should have a clear benefit and linkage to an important national, international or regional discourse. This could either be economic, social or political focus. It is usually the beginning of a serious research work, where the applicants must show in the proposal how the research opportunity will be applied after the framework of a national or regional programme in a developed or developing country.

Writing proposals

A typical proposal should include the following:

- **Problem statement** *(issue, research question or problem to be investigated).*

- **Justification and rationale** *(importance and significance of subject, why it is important to be addressed?)*

- **Background** *(literature review of work that has been done on this issue).*

- **Main objective and specific objectives** *(candidate's proposed contribution).*

- **Materials and methods** *(materials needed to accomplish the research and research design, including hypotheses to be tested, data sources, procedures and analytical techniques to be employed).*

- **Expected outputs** *(product(s) resulting during/from the research).*

- **Beneficiaries and impact** *(intended audience for the product and outcome of the research in terms of plant genetic resources conservation and use, potential application of results and social/economic benefits for the home institute or home country or other developing country).*

- **Innovativeness** *(what is novel in the identification of the problem or approach and what would this proposal add to the knowledge base).*
- **Application of results** *(show how the training, knowledge or skills will be applied after the execution of the project).*

- **Applicant's expertise** in relation to the issues to be investigated *(related previous research work including MSc/PhD research, involvement in ongoing research programmes/PhD research).*

- **Work plan** for the proposed period of the fellowship *(activities and timetable).*

- **Budget** *(cost of implementation of the proposed activities—see budget headings in the application form. Indicate other funding sources, if available).*

- **Bibliography.**

Tips on How to Write a Good Proposal

Different donor agencies have different proposal guidelines. Therefore, before you even begin to put pen to paper, you should know what is required by that particular donor. Visit the prospective donor website. Read the guidelines carefully, and then read them again, and once again.

Typically, guidelines contain the following:

1. Submission deadline(s).

2. Eligibility criteria.

3. Proposal format.

4. Proposal review timetable.

5. Budgets and what's covered and what's excluded.

6. Evaluation process and criteria.

7. Whom to contact.

There are several formats to a proposal, but one that has the most flexibility and has achieved the widest acceptance is as follows:

Choosing your research topic:

This is the first step you must make while thinking of writing a research proposal. Most donors outline priority research areas they are willing to support. It is important that you do your homework thoroughly and be able to identify the prospective funder that is interested in your research area.

Many donors give priority to projects managed principally by **women,** especially in the developing world. You may want to focus on gender related issues and projects that remedy problems affecting women and children– the underrepresented.

Many donors are keen to support women scientists and researches focused on gender issues. Why not take advantage!

Title page: The title page should contain, neatly arranged, the following:

1). Title of the project

2). Name(s) of the author(s) and nationality.

3). Name of the faculty advisor(s)/collaborators

4). Date of submission

The title page should look professional and neat. However, do not waste time using fancy report covers, expensive binding, or other procedures that may send the wrong message to the potential funding agency. You are trying to impress the potential funding agency with how you need funding, not the message that you do things rather expensively!

Think of your title as a mini-abstract. A good title should paint a quick picture for the reader of the key idea(s) of your project.

Try and use only a single sentence for your title. If the sentence is getting too long try removing some words. When all else fails try using a two part title with the parts separated by a colon (use only as a last resort!). Do not attempt to use the title as an abstract of your entire proposal.

The problem:

This includes the background, rationale, comparative advantages. Describe the problem you are investigating, its importance, size and questions which guide the research process. Size also relates to relevance of problem globally and regionally or locally. How will this project contribute to solving the problem? Why is it necessary and to whom? Is there a special reason why you and/or your organization are uniquely suited to conduct the project? (Geographic location, language expertise, prior involvements in this area, close relationship to the project clientele, etc.)

Clearly indicate how the problems that will be addressed in your project will help the potential funding agency in fulfilling their own goals and objectives. As you write, keep the funding agency in your mind as a "cooperating partner" committed to the same concerns that you are. Use the statement of the problem to show that your proposed project is definitely needed and should be funded.

Purpose and objectives:

Describe the high order objectives/aims of the proposal. Your objectives will form the basis for the activities of your project and will also serve as the basis for the evaluation of your project. You can start by stating the general objective of your proposal before zeroing in to specific objectives (these should not be more than five in number). Present measurable objectives for your project.

If you are dealing with "things" it is easier for them to be measured than if you are dealing with abstract ideas. Your proposal is easier for a prospective funding organization to understand (and the outcomes are much more clear) if you describe your objectives in measurable ways.

Outputs and milestones:

The outputs are the results which the project seeks to achieve. The outputs should, as much as possible relate to 'tangible products' (quantifiable, qualitative or verifiable) from conduct of the research. Milestones refer to outputs that are realized. They indicate viable achievements.

Approach and activities: Describe how the work will be undertaken. This section should clearly indicate how the methods that will be used in your research will allow the outcomes of your project to have value for others beyond your project.

The prospective funding agency will be looking at your methods to see what it is that you are proposing that will be new, unique or innovative. Make sure you clearly present the innovative aspects of your idea. If collaborators are involved, indicate at what stage and what their contribution to the project is.

Impact and beneficiaries:

Who will the project benefit, when and how? How will the outputs of project be disseminated to target beneficiaries? There is a distinction between direct recipients and ultimate beneficiaries. Also distinguish between immediate impact of research (end of project situation) and longer-term. Ultimately, development impacts are those on productivity, environment, biodiversity, social-economic factors.

Project location:

It is important to indicate where the project will be carried out e.g. countries, regions. You could consider providing a map of your location.

Collaborators:

Indicate who your collaborators (if any) are. Major collaborators always include other non-governmental organizations (NGOs), government parastatals, universities among many others.

Budget:

What is your total budget? What is the donor requested to fund? Make your budget **realistic**. Carefully think through exactly what you will need from the funding agency to carry out the project and establish your budget around this amount. (Do not forget, funding agencies receive lots of requests for funding. They can easily tell when someone has inflated a budget in order to procure funds for other purposes.

Don't get caught in this situation.) A good strategy to use with a potential funding agency is to ask for a small amount of funding for the first phase of the project.

Specify in your proposal what you expect to achieve during this "minimal funding phase" and when you will be returning to the funding agency to ask for funds for the next phase. This can suggest to the funding agency that they can terminate the relationship easily if your project is not successful (and then it is essential for you to make sure the first phase IS successful). If the potential funding agency doesn't have any suggested/required budget categories, organize your budget around a set of meaningful categories that work for the project you are proposing.

Categories that you may want to consider for itemizing your budget are:

Personnel (salary and benefits)

Consultants (salary)

Instruction

Equipment

Supplies

Communication (telephone/postage)

Materials preparation

Travel

Rental of facilities

Evaluation

Other expenses

Indirect costs (costs that your organization requires that you include)

Unless otherwise noted by donor, always indicate your budget in US$.

Writing scientific papers

When you start writing the first draft of your manuscript, it may help to prepare a very rough outline covering only the most important points that you want to convey to your audience. Do not waste time on editing your draft and trying to make it perfect at this point. In the initial stages of writing it does not matter if your sentences are complete, just as long as you get your main points and ideas on paper.

Some people prefer beginning with the introduction and subsequently continue in logical order through each section of the paper. Others prefer to start with the easiest parts, which are usually the methods and results followed by the discussion and introduction. The abstract is typically written after the rest of the paper is completed.

1. TITLE

► The title should convey the **essence** of the article and draw the **attention** of the reader.

►Try to keep your title as clear and short as possible.

►Do not use abbreviations in the title and avoid jargon.

2. ABSTRACT

►The abstract should **summarize the objectives, methods, results and main conclusions** of the paper.

►The abstract is the advertisement for the paper, and it is often the only part many people read. Ideally, the abstract should be written in a way that gives away the clue of your paper but still makes people curious to read the whole story.

►Keep your abstract as concise as possible. Many journals have a maximum number of words that can be used for the abstract. Most abstracts consist of approximately 100–200 words.

3. INTRODUCTION

►The purpose of the introduction is to **provide essential background information**, and to generate interest in your paper. Do not assume that people will automatically be curious to read your paper. It is up to you to spark the interest of the reader by writing a good introduction.

►Keep the use of jargon to a minimum. If you cannot avoid it, then explain jargon to readers who are unfamiliar with the specifics. Also avoid abbreviations as much as possible, because they deter comprehension of your introduction.

►Briefly introduce the taxon or the system that you focus on in the paper so that the reader gains an appreciation for them. If you focus on taxa that are unfamiliar to most people, you should provide a brief account of pertinent information such as their natural history.

►The introduction should make clear why the topic of your paper is important, and provide the necessary information for the reader to evaluate and understand the relevance of your work. For instance, you could indicate why your approach is innovative or how your paper adds to previous work in the field.

►Always state the objective (main question, hypothesis) of your research *explicitly* in the introduction. Keep this objective clearly in mind when you write your manuscript.

►Make sure that the order in which you present information is logical. Most people start with providing information that places the paper in a wider framework, then zoom in on a particular problem, and finally mention the specific aims of their study.

►There must be a 1:1:1 correspondence between objectives stated in the introduction, methods and results. Do not make any promises in your introduction that cannot be kept based on your data.

4. METHODS

►The methods section must include **sufficient information to enable others to repeat your work**. It should also list the analytical methods used.

►Methods must be clearly related to your research question and objectives. Explain how you collected the data and how it relates to a research question that you stated in the introduction.

►Most scientific projects start off with a plan that changes during the course of research. Report what you actually did – not what you planned to do.

5. RESULTS

►This section should **summarize all the relevant data** collected and present the results of any analyses that were conducted.

►Figures and tables should be clear and relevant. Legends should be accurate and provide sufficient information for correct interpretation of the figures.

►Often (but not always) figures are used to convey ideas, whereas tables are used to convey data. Keep your figures and tables simple.

►When describing your data, it is generally better to report standard deviation (SD) instead of standard error (SE). Do not report the coefficient of variation (CV), since it adds no new information to the SD.

►Do *not* discuss your data here. Discussion and interpretation of results should take place in the next section of your paper.

►If you are certain that you used the appropriate statistical treatment for your data, but your analyses do not show the significant differences that you were hoping to find – be frank about this and do not manipulate your data to get a "better" result.

►Your results need not necessarily always agree with what other people have found. Unexpected results are often the most interesting. The most important thing is to always be honest about your data.

6. DISCUSSION

►The discussion is in many ways the most important section of your paper. The discussion should present an interpretation of your results, as well as a comparison with those of others. Just presenting a list of results is not enough for a scientific publication.

You need to be able to **interpret your data, and draw conclusions**.

►Ensure that all your arguments and assumptions are scientifically formulated, clearly stated, and well supported, either by your own results or by citing other people's work. All your statements must be accurate (true or falsifiable) and logical.

►A good paper can be read and evaluated on its own. Ensure that you have provided all the necessary information for your reader to make an independent judgment.

►Refer to the original objective (main question, hypothesis) of your research. Explain whether or not you have succeeded in reaching your objective.

►Make sure to explain why your results are of importance in a wider context.

►Some journals require you to formulate your conclusion in a separate section. If not, you should end the discussion with a concluding paragraph. If your data do not allow you to draw any firm conclusions, you can make generalized inferences. You may also end your paper with a section that discusses the relevance of your study system or with a general statement about the implications for future research.

7. REFERENCES

►It is important to stay updated with the latest literature. Always cite the most recent papers that are relevant to your work. It looks very unprofessional if you refer to a book from 1975 but neglect to cite a paper from 2002 providing new data and insights that are pertinent to your topic.

► Make sure that you **cite your sources properly**. Journals always provide guidelines on how to cite references, including scientific papers, book chapters, and even Internet sites. It is important that you *strictly* follow the format used by the journal to which you intend to submit your work.

►When citing a work by three or more authors, refer to them as "et al." in your paper. For instance: (Cohen, Bills, Cocquyt, and Caljon 1993) should be cited as: (Cohen et al., 1993). In the references section, you should list every author.

Writing student projects

Unlike an essay, a report has a formalized structure. Taking into account disciplinary differences, scientific or laboratory reports written by undergraduates share the same format as scientific reports written by academics for publication. The sections of a scientific report are:

Elements of a Student's Research Paper

· Title

· Abstract

· Introduction

· Methods

· Results

· Discussion

· Works Cited

· Appendices

While all scientific research reports share a common organizational setup, you will find variations within reports. The common structure of the report is to ensure ease of reading.

Researchers usually want to quickly filter the huge amount of information available in scientific publications; the student's projects are no exception.

A common organizational structure helps readers move quickly through reports. In fact, often scientists do not read entire reports and rarely read them in chronological order. For example, they may skip directly to the findings and not read the methods.

The discrete sections of a report also force the researcher to carefully distinguish the various aspects of the experiment. For example, what is a result and what is your interpretation of that finding?

Title

Title must be informative and specific, concise and understandable.

Abstract

The abstract is a one paragraph (<100 words) summary of the report, including the question investigated, the methods used, the principal results and conclusions.

☞**Abstract** offers a complete but selective summary of most significant ideas and information

☞**Abstract** uses clear, precise wording (increase precision through successive revisions)

☞**Abstract** accurately reflects the paper's organization, emphasis, and content on a very small scale

Why do we write abstracts?

Abstracts are a quick way for readers to understand your research project. Thus, readers can assess the relevance of your work to their own simply by reading your abstract.

Your intended audience should be able to understand the abstract without having to read any of the report.

Because the abstract is usually the first thing that readers read, and based on that abstract, make a judgment whether to keep reading or not, the abstract is one of the most important elements of a scientific report.

Introduction

The introduction is a brief section (no more than 1 page usually) designed to inform the reader of the relevance of your research and includes a short history or relevant background that leads to a statement of the problem that is being addressed. Introductions usually follow a *funnel* style, starting broadly and then narrowing. They funnel from something known, to something unknown, to the question the paper is asking.

Methods

The Methods section chronologically describes the process you undertook to complete the research. The method is written as a process description, not as a lab manual procedure. Be precise, complete, and concise: include only relevant information—no unnecessary details, anecdotes, excuses, or confessions.

☞**Methods** must give details of experimental procedures

☞**Methods** must describe techniques for tracking functional variables (timing, temperature, humidity, etc.) and rational for tracking those variables · explains analytical techniques used

Results

What are results? **"Just the facts."**

The Results section DESCRIBES but DOES NOT INTERPRET the major findings of your experiment. Present the data using graphs and tables to reveal any trends that you found. Describe these trends to the reader. The presentation of data may be either chronological, to correspond with the Methods, or in the order of most to least importance. If you make good use of your tables and graphs, the results can be presented briefly in several paragraphs.

Discussion

What's the Discussion? **Interpretation.**

This section offers your interpretations and conclusions about your findings. How do your results relate to the goals of the study, as stated in your introduction, and how do they relate to the results that might have been expected from background information obtained in lectures, textbooks, or outside reading? This is your chance to demonstrate your ability to synthesize, analyze, evaluate, interpret, and reason effectively. You do NOT need to bring in theories to explain your ideas beyond what you have learned in class. Your readers are looking for well-supported opinions, not for leaps of fancy or mere repetitions of your findings, so you will need to think carefully about your findings in order to draw conclusions that are neither too narrow nor too broad.

Works Cited (References) – IEEE style

If you reference an outside source in your report, you should cite where you found that source. You should also cite sources which your reader, a fellow student, may be unfamiliar with. The appropriate style for citing sources in this report is IEEE style. Cite only material that you have actually read.

Topic No 4
Preparation of Report and recommendations

Definition of a report

A report is the written form of an activity. It is an outcome of a designated set of activities. The success of a scientist does not solely depends on his or her ability to carry out research work but it depends on his /her ability to communicate the outcome of the research work to his colleagues and other end users of scientific results. One important avenue of scientific communication is preparation and writing of the results of findings.

In the training and development of a scientist, he or she will be expected to be involved in one or more report preparation, writing and presentation.

The various reports that are prepared and presented include:

(a)   Seminar paper
(b)   Conference reports
(c)   Newspaper and magazine reports
(d)   Extension manuals,
(e)   Newsletters and scientific Bulletins
(f)   Textbooks and book chapters
(g)   Research project proposals
(h)   Journal Research manuscripts

Each of the above forms of writings has their specific uses, specific audience and specific avenue of presentation.

What is however common to all is that they depend on the targeted audience. Effective writing and preparation involves knowing how to write to reach the target audience.

A typical technical report has the following progression:

Figure 1: Report structure
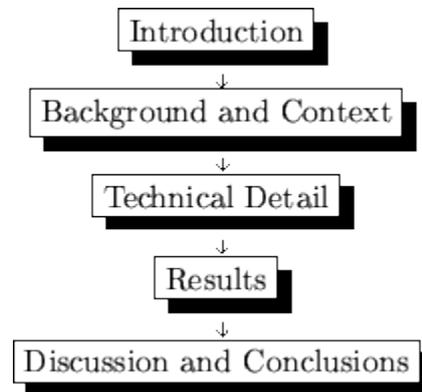
Typical report sections

Depending on the nature of your document, it may (optionally) have the following sections:

Title page – with name, affiliation, date, etc.

Dedication – to a friend, family member, or loved one

Declaration – that the material in the report is the author's own work

Acknowledgement– to those who have helped or influenced your work,

Contents list – which lists items from here on with appropriate page references,

Abstract – which summarises the report contents

Introduction – which introduces the work, provides the motivation and context and outlines other related work

Main technical chapters – which document the core technical work

Conclusions – Writing conclusions

Conclusions must *conclude*! They must give some overall insight into the value of your work in general and inform the reader of what the major impact is, together with any caveats which the reader should be aware of. A popular `cop-out' is to fill the conclusions section with a summary of what's in the technical chapters. This concludes nothing! The summary (if present) should be at the start of the document as an abstract. It may be helpful to flag items on a list, which are appropriate for the conclusions section, while writing the technical chapters. The key to your conclusions is then provided by the list.

References –
Appendices

Assignments:
Students will be allocated specific research topics to practise the art of writing and presentation.

(b) Already published research papers will be distributed to students for criticism and possible debate.

(c) Class work on the advantages of proper selection of research topics will be collectively presented and discussed.