

Science Projects – a Modular Approach

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Mutual contacts of research scientists and further relations between scientific institutions in Egypt and Germany are steps on the way of wider understanding between nations of the two countries. The spirit of cooperation between the German and Egyptian partners can be reconfirmed indeed through joint works and scientific projects that achieve the overall objective, namely, encouraging the pursuit of science by supporting excellence in scientific research.

General requirements for scientific projects:

A- Data and information bank which helps in:

- Surveying and assessment of the previous studies and present situation on an international scale.
- Cost information related to different items of technical tasks, services, and equipments.
- Standard tests by which it is going to evaluate the output of the research.

B- Administrative and financial management systems.

C- Computer-assisted system for analysis of quantitative data

D- Publication contribution that guarantee the diffusion of information among working team and public.

In planning for a project, different aspects must be taken in consideration:

- Technical and economic limitations (production of safe products, etc)
- Easy adaptation and application.
- Economic feasibility and scientific value.
- Technology implemented especially those to be developed.
- Cost efficiency.

Evaluation criteria:

Evaluation of projects depends upon criteria on 5 levels

A- Personnel: background and capabilities of principal investigator and his team, and experience in similar projects.

B- Institutional experience: contribution in similar projects - facilities and services, and their relevance to the work of the project

C- Technical approach: appropriateness of the proposed project - comprehensiveness of the tasks – efficiency of the tasks – and the project must be oriented to local or global problem.

D- Benefits: economic impact, social impact, environmental impact with good definition of the end-user

E- Total budget: budget required should be reasonable and in direct proportion to the benefits.

Guidelines for the preparation of proposals

Title:

It is a concise description of the activity proposed .

Background:

This section is aiming at providing pertinent background information needed to set the stage for the proposed project; the most important information are:

- Historical development
- Previous or related studies.
- Field-level data collection
- Proper methods of analysis

Problem identification:

- Description of the problem to be solved
- Origin and causes of the problem
- What would be the effects of :
 - Doing nothing
 - Carrying out work at current rate and quality
 - Sustainability (chances that the proposed work will continue after completion).

Purpose (goal):

- What questions are you trying to answer?
- What experimental data are you seeking? Be sure to have limited your purpose to a goal you can attain.

Objectives:

- This is the ultimate goal. It Can be and should be stated in one sentence.
- Objective statements may take the form of :
 - The objective is to investigate
 - The objective is to compare
 - The objective is to determine the relationship of
 - The objective is to determine the effect of scientific and technical merit

Project schedule:

- What is to be done
- When
- How it will be carried out (methodology)
- By whom

Benefits:

- Economic benefits
- Technical benefits
- Social benefits
- Add to national resources

Proposal duration:

- Number of months
- Maximum duration
- Effective date
- Date of submission

Facilities, services available:

- Types of work needed
- Timetable

Equipments and spare parts needed:

- Type
- Quantity
- Quality
- Frequency of use
- Anticipated future use
- Upgrading

Local materials and supplies available**Training and visits required:**

- Names of trainee
- Number
- Training program
- Timing
- Location

Resource loading:

- Personnel
- Equipment
- Travel
- Materials and supplies
- Direct cost

Cost proposal:

- Requested budget
 - Salaries
 - Consultants
 - Equipments and spare parts
 - Supplies
 - Travel (in-country and abroad)
 - Other direct costs:
 - includes any expenditures that does not fall within any of the specified items.
 - Local operating and maintenance costs
 - Customs duty fees
 - Remodelling costs
- Cost sharing (in multi-institutional projects)

Principal investigator:

- Name and title
- Telephone number
- Address
- Previous studies relevant to the problem

Research team:

- Number
- Qualifications

Consultants:

- Name and description of the specialty
- Reason for consultation
- Expected length for consultation
- Expected rate for consultant fee to be paid

Proposing organization(s):

- Name and title
- Telephone number
- Address
- Institutional experience

Analysis and data processing**Project management:**

How it is planned to manage the project both administratively and financially (planning, organizing, directing, control, relationship between the research team and the institute, division of the work among the participants, technical meetings, etc.)

Progress reports:

Throughout the duration of the project, two types of reports are required for performance analysis:

- Quarterly, half-annual, annual reports.
- Final report after completion of the project.

Quality control and quality assurance:

- Bench-scale study on the identified process to validate the physical, chemical, biological, and economical projective.
- Conduction of pilot plant to validate the results of bench-scale testing.
- Full-scale trials to validate the feasibility studies.

Scientific and technical publication:

- Secretary
- Publishing date
- Cost
- Translation

Summary of proposed work and key words:

Consist of an abstract (300-500 words) which must fulfill:

- Purpose of goal
- Describe how the results are beneficial
- Method of approach (how the work will be carried out)
- Potential to contribute benefits to end-user

English summary

Arabic summary

Salary:

The total budget allocated for salaries should not exceed 20 % of the total budget of the project

Employees :

Laboratory and university researchers may be compensated at the hourly rates for the hours actually worked on up to a maximum of 9 (nine) hours per week (full-time working hours is $6 \times 6 = 36$ hours/week) assuming that the project work is outside their normal duties. However, in no event may the salary paid exceed 200 % of the researcher's basic salary.

Travel:

The average rate for allowance for the Egyptian travelling abroad varies from time to time and from one city to the other.

Travel and per diem expenses of consultants (foreign and Egyptian) should be shown in the budget.

Employee on leave without pay :

Compensation is allowed at "reasonable" amounts considering salary levels paid in the private market for similar work.

Consultants:

The correct maximum fee for (US) consultant should not exceed US\$ that his/her salary history for the last three years can justify it.