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What makes YSSP applications succeed or fail: a guidance

The aim of this document is to provide guidance on preparing a YSSP application that captures the attention of the selection committee. While no advice can guarantee success, thoughtful preparation can considerably strengthen your application and ensure it resonates with IIASA's mission and current research priorities.

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Introduction

Each year, IIASA receives far more YSSP applications than it can accommodate. Selection is therefore competitive and based on the best fit with IIASA's research agenda and scientific mission. Although there is no single formula for a successful application, there are certain qualities that tend to distinguish strong proposals. These include:

- a well-chosen and clearly framed topic and title,
- familiarity with the relevant literature,
- well-defined research questions and hypotheses,
- an appropriate and feasible methodology,
- the availability of necessary data, and
- a project design that is coherent, ambitious, yet realistic within the scope of one summer.

There is no "one-size-fits-all" model for applications. Selection also depends on factors such as available mentorship capacity, evolving research priorities, and opportunities through joint funding. Nevertheless, there are implicit standards that every strong application should meet, as outlined above.

If you are seriously interested in applying for the YSSP we recommend a 3–step approach for preparing an application:

1. **Explore IIASA's Research Groups** Begin by consulting the IIASA website to identify a research group that aligns with your interests. Review their publications to assess whether your project is a good fit. Please note that YSSP projects must be based on data already available to you at the time of arrival. IIASA does not provide facilities for fieldwork, laboratory experiments, or hardware development (e.g., building devices such as water filters or solar cells).
2. **Review Past YSSP Booklets** Browse the project abstracts from previous YSSP cohorts, which are published annually in the "YSSP Booklets" and can be found on the IIASA YSSP webpage. These provide valuable insight into the scope, methods, and level of ambition that characterize successful projects.
3. **Draft Your Application** With this context in mind, prepare your own application, ensuring it demonstrates both intellectual rigor and alignment with IIASA's research.

The YSSP is a program designed for "senior" PhD students. Since the PhD works differently in different countries, it may be worth clarifying that by this we mean:

- You are 1 to maximum of 2 years away from completing your PhD in a full-time program.
- You have completed all coursework.
- You have submitted and ideally published already research articles, i.e. you are familiar with the steps of designing, executing, writing and revising academic work.

We encourage you to apply if you generally fit this description. But if you don't, then consider applying only next year or the year after – just not yet now. Or consider applying for another IIASA program, such as one of the summer schools.

The application

The YSSP application works a bit like an application for funding for a research project. To be successful you have to convince the selection committee that your project tries to answer interesting and relevant questions, that you have the appropriate tools to answer these and that you are the right person to carry out this research.

Remember that IIASA is an international research organization with global reach and that much of our research addresses global or universal challenges that have relevance beyond national borders. This does not mean that your research has to have global scope, but it needs to have synergies with the research agenda of one or several IIASA research groups. Such synergies can sometimes arise from your project bridging a gap between existing research and the integrative research that IIASA often pursues.

Some examples of successful and unsuccessful titles in recent years

Here are examples of titles of projects that got selected in recent years. This does not necessarily mean they would be selected today; whether or not topics are successful depends on the full application:

- Assessing subnational population forecast models for developing countries
- Implications of not meeting modeled carbon dioxide removals

- Interactive influences of climate change, water availability, and policy on dryland urbanization
- The transformative capacity of partnerships for the SDGs: opening the black box of problem-solving and intervention-design processes in nexus governance
- Evaluating potential contributions of multi-cropping to food security and land sparing
- Greenhouse Gas Mitigation Strategies in East African Pastoral Systems: Beyond Technical Solutions
- The Threat to Biodiversity from Bioenergy Expansion in Europe

Examples of titles of projects that did ***not*** make the shortlist

- Modelling the complex relationships between socio-economic, political, cultural and climatique factors influencing the value chain of Cola nitida (Vent)
- Numerical and experimental studies of a hybrid solar/biomass cooker in a Sahelian climate.
- Comparative study of lateral flow test and the rapid establishment techniques for the diagnosis Brucella
- Identification of QTLs and Candidate Genes for drought tolerance and beta carotene content in sweetpotato
- Life Cycle Assessment of Proton Exchange Membrane (PEM) Fuel Cells
- Improving interactions between pediatric cancer patients and care teams through telehealth
- Examining the Impact of Distance Education Development Using Techno-Pedagogy on Promoting Social Justice and Sustaining Rural Population: Based on the Experiences of 200 Rural Students in a Distance Education Center
- CARBON DIOXIDE EMISSION MEASUREMENT AND REPORTING SYSTEM FOR AUTOMOBILES
- Biotransformation of soil and water contaminates, using various fungi.

Specific Guidance

In the following we have collated some observations about past successful and unsuccessful applications. These observations can serve as guidance but they do not guarantee success in future applications.

Section: Abstract

Characteristics of Successful Abstracts

1. Clear Framing of a Systemic Problem
    a. Open with a **problem of global or cross-sector relevance** (e.g., energy–water–food nexus, equitable transitions, climate adaptation).
    b. Situate the research in **policy or decision-making context**, not just a discipline.
    c. Include **one sentence showing awareness of trade-offs or feedbacks** ("mitigation strategies can reduce emissions but increase land-use pressure…").
2. Defined Research Gap and Objective
    a. Explain **what is missing in existing analysis** and how the project will fill it.

"While national climate strategies assess mitigation cost, they rarely quantify co-benefits for health and equity. This project will…"

b. State the **specific objective** in one sentence, usually beginning with an action verb (quantify, assess, model, explore).

3. Concise Description of Approach
   a. Mention **key methods or models** ("using IIASA's XXX framework and satellite-derived emissions data…").
   b. Indicate the **analytical logic**, e.g., scenario analysis, optimization, or integrated modeling.
   c. Avoid detailing technical steps — keep focus on how the approach answers the question.
4. Expected Contribution and Relevance
   4.1. End with a **forward-looking statement**: contribution to science, IIASA's work, or policy relevance.
   4.2. Typical final phrases:
   "…to inform national decarbonization strategies."
   "…to enhance understanding of systemic resilience under uncertainty."
   "…to provide policy-relevant insights for sustainable land management."
5. Tone and Style
   5.1. Active voice, confident verbs, minimal adjectives.
   5.2. Typically one paragraph, well-balanced sentences (~20–25 words).
   5.3. Reads like a **mini research pitch**, not a summary.
   5.4. Structure: Problem → Gap → Approach → Expected Impact

Common Traits of Unsuccessful Abstracts

1. Topic Without a Question
   a. Start with "This study is about…" or "I will study…" without stating why it matters or what gap it fills.
   b. Descriptive statements ("climate change is a major challenge") with no analytical framing.
   c. No Systems Dimension
   d. Treats the problem as linear or single-variable (e.g., "effects of rainfall on crop yield").
   e. No mention of interactions, feedbacks, or trade-offs.
2. Unclear or Overly Ambitious Objectives
   a. Use of generic goals ("to improve understanding," "to promote sustainability").
   b. Vague verbs ("explore," "consider," "discuss") that signal lack of methodological clarity.
   c. Overly broad scope for a 3-month project.
3. Weak or Missing Method Description
   a. Fail to identify how the question will be addressed.
   b. List tools without explaining relevance ("using GIS and statistical analysis").
   c. Present the abstract as a plan, not an argument.
4. No Connection to IIASA
   a. Omit references to IIASA models, mentors, or research programs.
   b. Ignore the interdisciplinary or international dimension of IIASA work.
5. Language Issues

    a. Overuse of adjectives (“very important,” “highly significant”).
    b. Overly long sentences or bullet-style enumeration.
    c. Aspirational, descriptive, often narrative
    d. Grammatical errors or unclear phrasing reduce credibility.
6. Structure
    a. Topic description → general ambition → vague goal

Section Main Research Questions and Objectives

Traits of Successful Proposals

1. **Systemic framing:** The problem is not isolated; it shows links among sectors, scales, or policy domains.
2. **Focused but relevant:** Defines one main research question and 2–3 achievable objectives.
3. **Policy significance:** Connects the question to real-world decisions or international agendas (e.g., NDCs, SDGs).
4. **IIASA alignment:** Mentions which program or model the topic fits.
5. **Research gap clearly stated:** “Existing studies overlook X; this project quantifies Y to address that.”
6. **Time-bounded feasibility:** Recognizes what can be achieved in a 3-month fellowship.

Reviewers look for systems relevance, clear objectives, IIASA fit, clear understanding of IIASA’s interdisciplinary approach

Traits of Unsuccessful Proposals

1. Begin with generalities (“Climate change is one of the biggest problems...”).
2. No explicit question or hypothesis — just a topic (“I want to study renewable energy”).
3. Overly broad (“analyzing all sustainability challenges of region X”).
4. No connection to systems analysis or to IIASA’s research portfolio.
5. Use of vague verbs: explore, look into, understand, without measurable outcomes.

Common weakness: broad, vague, not feasible

Section Methods and Approach

Traits of Successful Proposals

1. **Direct link between question and method:** Each objective maps to a clear analytical step.
2. **Builds on IIASA’s strengths:** Uses IIASA models, databases, or collaborations.
3. **Methodological clarity:** Explains the logic of analysis, not just tool names.
4. **Feasibility:** Shows what part of the method can realistically be done during YSSP.

5. **Integration and systems thinking:** Combines disciplines (e.g., economics and climate) or data types (quantitative + qualitative).
6. **Transparency:** Notes validation, calibration, or comparison methods.

Reviewers look for a coherent plan, integration, feasibility

Traits of Unsuccessful Proposals

1. Method section is a **list of tools** without justification ("I will use GIS, R, and regression").
2. **Unrealistic** — proposes building new models or collecting large datasets.
3. Lacks **systems linkage** (studies one variable in isolation).
4. Unclear data–method connection ("Data will be analyzed using statistical methods").
5. Ignores the 3-month constraint.

Common weakness: tool list, no logic, unrealistic

Section Data availability

Traits of Successful Proposals

1. Lists **specific datasets** (names, years, sources).
2. Demonstrates **data already accessible** or open source.
3. Connects data directly to the method ("these variables feed into the GAINS model").
4. Notes **data limitations and mitigation** (e.g., use of proxies).
5. Mentions **data cleaning, harmonization, or integration** plans.
6. Shows familiarity with **IIASA's or partners' databases**.

Reviewers look for access, linkage, readiness

Traits of Unsuccessful Proposals

1. "Data will be collected" with no detail.
2. Lists multiple datasets but unclear how they relate.
3. Requires restricted or non-existent data.
4. No data–question connection.
5. Unrealistic acquisition timeline (months or fieldwork).

Common weakness: "Will collect," no detail

Section Innovative Aspects

Traits of Successful Proposals

1. **Explains what is new**: a novel model integration, new indicator, or underexplored region.

2. **Innovation through synthesis:** connects disciplines, scales, or policy domains in a fresh way.
3. **Value-added for IIASA:** expands an existing model, creates a new dataset, or tests a new policy dimension.
4. **Conceptual clarity:** defines innovation precisely ("introduces behavioral parameters into energy scenarios").
5. **Balanced ambition:** achievable within YSSP timeframe.

Reviewers look for novel integration, a clear gap

Traits of Unsuccessful Proposals

1. "This research is innovative because it is new" — with no evidence.
2. Mistakes topic novelty for methodological innovation.
3. Lacks connection to IIASA work or global relevance.
4. Proposes speculative or infeasible ideas.
5. Uses jargon ("innovative framework") without substance.

Common weakness: empty claims of newness

Expected Results and Risks for Success

Traits of Successful Proposals

1. States **specific deliverables**: paper draft, dataset, model runs, visual outputs.
2. Explains **how results will be used** (for policy, scientific paper, or PhD chapter).
3. Demonstrates awareness of **potential challenges** (data gaps, computational limits) and how to manage them.
4. Includes **learning or capacity goals** (methods mastered, network built).
5. Shows **alignment with IIASA mission** — contributing to systems transformation or policy dialogue.

Reviews look for realistic, measurable, reflective

Traits of Unsuccessful Proposals

1. Vague ("results will be useful for sustainability").
2. Unrealistic expectations ("will publish two papers in Nature").
3. No mention of risks, or fatal risks ignored.
4. Outputs unclear or not measurable.
5. No link back to objectives or to IIASA's contribution.

Common weakness: Overpromising or generic

Checklists

Abstract:

1. **Problem statement (1–2 sentences):**
    a. What challenge or system issue motivates your study?
    b. Why does it matter globally or to IIASA?
2. **Knowledge gap (1 sentence):**
    a. What is missing in existing research or models?
3. **Objective (1 sentence):**
    a. What exactly will your study do? Use an action verb.
4. **Approach (1–2 sentences):**
    a. Which models, data, or frameworks will you use?
    b. Why is this feasible in 3 months?
5. **Expected contribution (1 sentence):**
    a. What will your results help understand, improve, or inform?
6. **Final polish:**
    a. Keep between **180–250 words**.
    b. Avoid lists, clichés, or filler.
    c. Use **transitions** to create logical flow.
    d. Make sure reviewers can immediately see what, why, and how.

Main Research Questions and Objectives

1. Start with a concrete **problem statement** (who, where, what tension).
2. Specify the **gap in knowledge or practice**.
3. Write **one clear research question** (possibly with sub-questions).
4. Formulate **2–3 objectives** using action verbs (quantify, simulate, evaluate).
5. Mention **IIASA program relevance**.
6. Ensure the scope is feasible within **3 months**.

Methods and approach

1. Identify **what framework or model** you will use.
2. Explain **why this method fits** your research question.
3. Describe **data inputs, analytical steps, and expected outputs**.
4. Clarify **what will be done at IIASA vs. after YSSP**.
5. Mention any **software, models, or collaborations** needed.
6. Include a brief **validation or uncertainty approach**.
7. Keep the scope **realistic and replicable**.

Data

1. List dataset names, providers, and years.
2. Specify access status (open, licensed, or already obtained).
3. Link each dataset to a method or objective.
4. Acknowledge limitations or uncertainty.
5. Confirm feasibility within 3 months (no fieldwork unless already done).
6. Mention data management practices (cleaning, reproducibility).

Innovative aspects

1. Clarify **what kind of innovation** (conceptual, methodological, or applied).
2. Explain **why it matters** (fills a gap, enables new insight, or improves policy relevance).
3. Show **fit with IIASA's research landscape**.
4. Be **specific and evidence-based**, not rhetorical.
5. Keep innovation **feasible, not speculative**.
6. End with **how innovation contributes** to systems understanding.

Expected Results and Risks for Success

1. Define tangible deliverables (analysis, paper, model outputs).
2. Link each result to a specific objective.
3. Describe impact or application of the results.
4. Identify main risks and mitigation strategies.
5. Show realism — achievable in 3 months.
6. Highlight how IIASA's environment enables success.

GOOD LUCK!