Research Project Grant: Sustainability and resilience – Tackling climate and environmental changes

The aim of this grant is to allow researchers the freedom to identify the research idea, methods and implementation steps, and to solve a specific research task within a limited period of time. This call is jointly funded by the Swedish Research Council and Sida through the development aid funds provided by the government, and the research appropriations to Formas. Funded research must be of relevance to poverty reduction and sustainable development in low income countries. The project must include at least one researcher from a low-income or lower middle-income country. Relevant research of the highest quality in all scientific disciplines is supported.

Summary

Type of grantArea
Research Project funding
Development Research

Sustainability and resilience – Tackling climate and

environmental changes

Applicant Individual researcher

Participating researchersAt least one and up to six researchers may be invited to join

the application.

Grant period 1-3 years

Minimum 300,000 SEK per year

Grant amount

Maximum 2,000,000 SEK per year

Call deadline 24 May 2016 (at 2:00 PM)

Publication of grant award decisions No later than mid-November 2016

Grant period start date December 2016

What is the basis for the financiers' participation in the call?

The mission of the Swedish Research Council is to develop Swedish research of the highest scientific quality in all scientific fields, thus contributing to the development of society. The Swedish Research Council and Sida should also relate to the government's "Strategy for research cooperation and research in development cooperation (2015-2021)", where research should "contribute to strengthening research of high quality and relevance to poverty reduction and sustainable development focusing primarily on low-income countries and low-income regions".

The basis of Sida's participation in this call is also the government's "Results strategy for global action on sustainable environmental and climate development 2014-2017" which among other things aims to limit climate change and to increase poor people's adaptation and resistance to environmental impact and climate change. The scope of the above strategy includes activities within the Sida-supported Global Resilience Partnership (GRP). GRP is a partnership between the Rockefeller Foundation, USAID and Sida to identify innovative solutions for resilience for people in the Sahel region, the Horn of Africa and South and Southeast Asia. Sida's contribution to this call falls within the GRP activities.

The mission of Formas is to promote and support basic research and needs-driven research in the areas of Environment, Agricultural Sciences and Spatial Planning. Funded research must be of high scientific quality and relevant to Formas main areas.

For more information, please refer to the following documents:

Aid Policy Framework 🗗

Strategy for research cooperation and research in development cooperation 2015-2021

Results strategy for global action on sustainable environmental and climate development 2014-2017

Description of Formas' mission

Grant application requirements

You must fulfil the requirements set out below to be eligible to apply for the grant. We will carry out controls in order to ensure that applications that do not adhere to the eligibility criteria are rejected from further processing.

Focus

This call concerns project grants in development research, targeting "Sustainability and Resilience - Tackling climate and environmental changes" of relevance to low-income countries.

Climate and environmental change affects populations in low-income countries hard. The consequences are severe when extreme weather conditions change and loss of biodiversity and other threats to communities, people and ecosystems increase. Research on sustainability and resilience is therefore paramount. The area is multidisciplinary and concerns understanding and effects in complex systems. The research funded under this call must meet the requirements of high scientific quality and be relevant to the focus of the call. This means that the projects should be relevant in the areas of sustainability, resilience and climate and environmental change in a poverty perspective, where gender, democracy, human rights and conflict sensitivity may be important aspects.

Within the framework of this call research project must be of relevance to one or more of the countries defined as low income countries according to the <u>OECD Development Aid Committee (DAC) list</u> [47] (cf. columns "Least Developed Countries" and "Other Low Income Countries"), including the countries in the region covered by the Global Resilience Partnership: the Sahel, the horn of Africa and South and Southeast Asia. This means that the research project questions and results must be of benefit to these countries, but cooperation or other research activities may be carried out also in other countries.

The objectives of the call is to

- 1. strengthen the Swedish research in the area "Sustainability and resilience" of particular relevance to poverty reduction and sustainable development, focusing primarily on low-income countries and low-income regions.
- 2. contribute to capacity building in low-income countries
- 3. strengthen the capacity of young researchers in the field

The research can aim at both immediate benefit as well as knowledge that is of long-term significance for the objectives of the call. It may comprise everything from basic to applied research in all scientific disciplines.

See instructions below under the heading 'Relevance description' on how you describe the relevance of your research project to the call focus and objectives.

Researchers awarded funding under this call will be invited and expected to participate in the start and end seminar where researchers, practitioners, potential research users and other stakeholders are invited. The seminars aim to develop the area and to communicate and share knowledge. Researchers awarded funding under the call will be given the task of organising these seminars.

Applicant

The Research Project Grant is open to individual researchers. You are the project leader and scientific supervisor of the project and your active participation in the project must equal at least 20 percent of a full-time employment. You must hold a Swedish doctoral degree or an equivalent foreign degree. The doctoral degree must have been awarded at the deadline of this call. The date of issue will be considered to be the point in time when all the requirements of the degree were fulfilled (for example mandatory courses, the oral public defence of the doctoral thesis and the approved doctoral thesis).

The grant will be administered by a Swedish Higher Education Institution (HEI), or another public organisation in Sweden that fulfils the Swedish Research Council's <u>requirements for administrating organisations</u>. Please note that you will not be able to apply unless your organisation is an approved administrating organisation

If you are awarded funding, you must be employed by the administrating organisation when the grant period begins unless the Swedish Research Council, the administrating organisation or another employer (where applicable) agree otherwise. The employment must equal at least 20 % of a full-time employment. You do not have to be employed by the administrating organisation when the application is submitted.

Number of applications and previous grants

The eligibility criteria under this section only apply for you as the applicant and project leader, not as participating researcher.

What grants may I apply for simultaneously?

You may only submit one application for this grant under this call for applications for Research Project grants with focus Sustainability and Resilience. However, you can apply for Research Project Grants under other focus areas including development research, provided that the project idea is different.

Other restrictions in regard to grants you are eligible to apply for in parallel in the same year are presented in the table below.

Table: Grants that can be applied for in parallel

What eligibility criteria apply to holders of ongoing research grants from the Swedish Research Council?

There are certain restrictions if you are the project leader of an already awarded and ongoing grant, with a grant period (disbursement period from the Swedish Research Council) overlapping the grant period of the current grant application. Please observe that the period of availability, i.e. the period during which you may draw on the awarded grant, generally is longer than the grant period. You will find information on the rules that apply to your ongoing grant in the "Approval of terms" that you received from the Swedish Research Council.

You may apply for a Research Project Grant under this call if your ongoing grant concerns a different project idea.

See the table below for further information on grants that are eligible for holders of ongoing grants.

Table: Grants eligible for applicants with ongoing grants

N.B.: If you have been project leader for grants from the Swedish Research Council before, you will only be able to apply for a new grant if the final financial report on all previous grants were submitted within the stipulated time period. For questions as to whether all financial statements have been submitted, please turn to your administrating organisation.

Participating researchers

You may include up to six participating researchers in your application, i.e. researchers with a doctoral degree whose scientific merits and competence will be crucial for the implementation of the proposed research activities. The participating researchers do not have to be employed by a Swedish HEI.

Participating researchers will themselves have to enter the required information into the application system, and link it to the application. Other collaboration partners (where applicable) and their roles shall be presented in the research plan (cf. instructions under "Research plan" below).

Applications under this call requires at least one participating researcher working at a university or equivalent in a low-income or lower middle-income country. This researcher's active participation in the project must equal at least 20 percent of a full-time employment, but does not have to be employed in the project.

Application under this call also requires either a participating young researchers (see explanation below*) who works at a Swedish HEI, or funding for an unnamed PhD student or postdoc at a Swedish HEI that is not admitted at the time of application.

*The participating researcher should hold a PhD that is not older than seven years at the deadline of the call. The date of issue will be considered to be the point in time when all the requirements (for example mandatory courses, the oral defence of the doctoral thesis and the approved doctoral thesis). An older doctoral degree may still be eligible if a reason for a time deduction that is recognized by the Swedish Research Council is presented. The circumstances recognized as valid reasons by the Swedish Research Council include: parental leave, positions of trust in trade union organisations and student organisations, mandatory service in the total defence,

illness (own illness or care for close family members), medical internships or medical fellowship (applies to clinically active professionals). The last two categories may involve periods of up to 24 months each. Please note that unemployment, annual leave or other employment do not constitute valid reasons in this regard.

Costs and grant funding

The applied grant may be used to cover all kinds of project-related costs, e.g. salaries (including your own salary, which must correspond to your participation rate in the project), rental and property costs, operating costs (such as consumables, travel costs including visits to research centres, publishing costs and minor equipment) and depreciation costs. The grant may however not be used for scholarships. If a doctoral student takes part in the project, the grant may not be used to pay for his/her teaching hours.

You may apply for minimum 300,000 and maximum 2,000,000 SEK per year, including indirect costs.

The grant must be used in accordance with the OECD Development Aid Committee's (DAC) guidelines for what can be classified as aid.

Grant period

You may apply for a grant period of at least one and a maximum of three years, starting from December 2016.

First payment is made in December 2016, at the earliest.

How do I apply?

You apply electronically through <u>Prisma</u> , which is the application system used by the Swedish Research Council. You create an application in the Prisma system by filling out the text fields, retrieving information from your personal account, and by enclosing the required appendices.

In order for you to be able to apply, your organisation must have become an <u>approved administrating</u> <u>organisation</u> and created an organisation account in Prisma.

Most of the required steps in the Prisma system are described in the <u>User Manual</u> and the <u>FAQ answers</u>. We advise you to have a look at these documents when you write your application.

Creating a personal account in Prisma

Before you can apply, you must create a personal account in <u>Prisma P</u>, where you will store your personal data and your CV. The information only has to be entered once, and may subsequently be supplemented or amended whenever necessary. Since foreign experts are involved in most of the Swedish Research Council calls, we ask you to enter text in English in your CV data. The account will also enable you to register your publications for future use. Please note that publications stored in your account cannot be transferred to the application form. This is due to the fact that the publications function is still under development and has not yet been implemented

in the Swedish Research Council's calls. The publications list must therefore be presented in the form of an attached PDF file (see instructions under "Publications" below).

Please remember to create your personal account well in advance. The applications that you register in Prisma will be linked to your personal account.

All other participants, who will be involved in the preparation of the application must also create an individual Prisma account, and agree to their participation. Once that has been done, they will be able to link their account data to the application.

Text

Some text fields are formattable, which means that in those fields you can change the font and size and insert certain tables, formulas and symbols. If you have written the text in advance using Microsoft Word, you will also be able to copy paste the text and keep the initial formatting. Pictures can however not be inserted into the text fields.

All text fields have limitations as to the number of characters and this will be illustrated by means of a character counter. If you use too many characters you will not be able to register the application.

Signing

Both you, as applicant, and the official representative of the administrating organisation, must sign the application electronically in the Prisma system. More information can be found under the tab "Registering the application" below.

What must the application contain?

We ask you to familiarize yourself with the application form in Prisma at the same time as you read through the instructions below.

Language

Foreign peer reviewers participate in the scientific assessment of the applications. To guarantee a well-functioning procedure and a level playing field in the review process, we therefore ask you to submit your application in English.

Application subsections

The application form contains the following tabs:

- Descriptive data
- Research description
- Budget and research resources
- Publications (pdf)

- Administrating organisation
- Review panels
- Participants
- CV

Below you will find an outline of the information required under each tab. Mandatory information is marked with an asterisk* in the Prisma system.

Please note that there is a tab in the form for retrieval of publications from your personal Prisma account. This is however not used in the call and you may therefore disregard from it.

Descriptive data

Under this tab, you are requested to enter the project title in Swedish and English, the project period (number of years), and to select keywords and SCB classification codes. In this section, you should also list the countries of relevance for the project and to provide an abstract and a popular science description (cf. instructions below).

Abstract

The research plan abstract should contain a short description of:

- The research activities to be undertaken.
- The project implementation: the project organisation, the time table and the scientific methods to be used.
- The significance of the planned research.

The abstract should include a brief outline of the aim and the implementation of the research activities. Please use a language that can also be understood by somebody with a different scientific background

The outline may contain a maximum of 1,500 characters, including blank spaces (approximately half an A4 page in Times New Roman, size 12, single spacing).

Popular scientific description

Describe the project in a way that makes it possible to understand for a person not familiar with the subject. Describe why and how the research will be conducted, and explain in what way the new knowledge might be important.

The popular scientific description is an important tool for us when we provide information about research financed by the Swedish Research Council. If your application is approved, we therefore reserve the right to use the description for information purposes.

N.B.: Unlike the rest of the application, the popular scientific description must be written in Swedish.

The description may contain a maximum of 4,500 characters, including blank spaces (approximately one and a half A4 page in Times New Roman, size 12, single spacing).

Research description

Under this tab, you are requested to enclose you research plan in a PDF format, describe ethical considerations and the relevance to the focus of the call. If the research does not raise any ethical issues, this should also be stated.

Ethical considerations

Present the ethical issues raised by the research, and explain how they will be addressed in the research activities. We also ask you to indicate whether the research includes animal experiments, experiments involving human subjects, or the handling of personal data.

Research plan

In this section you are requested to attach your research plan in a PDF format. Please observe that the appendix may only contain one file, with a maximum size of 10 MB.

The research plan should consist of a short but complete description of the research task. The maximum length is ten A4 pages in Times New Roman, font size 12, single spacing, including references. The research plan should be given a forward-looking focus.

The following information must be included under separate headings in the research plan, and be listed in the given order:

- Purpose and aims: Present the overall purpose and specific objectives of the research project.
- **Survey of the field:** Outline previous research, either conducted by yourself or by others, as well as earlier research results in the field. Provide key references.
- **Project description:** Summarize the project by describing the theories, methods, time table and implementation. You should also describe the project organisation and clarify your own and the participating researchers' roles in the project. In this section, you may also include other researchers, who are not listed as participants in the application form.
- Security situation in collaboration country: If you plan to conduct research activities or field work in countries or regions which the Swedish Foreign Ministry advises against travelling to (including working trips), please describe your plans regarding the research stay and work in the involved country, in relation to the security situation. Foreign Ministry travelling information (in Swedish only).
- **Significance:** Describe the project's significance to the research area.
- **Preliminary results:** Describe your own experiments and pre-studies in the research area. If there are no preliminary results, this should also be stated.

Provide information on the following points under a separate heading if you consider them relevant to your application:

- International and national collaboration: Describe your and your team's cooperation with Swedish/foreign researchers and research groups. Indicate whether you participate in, or refer to, international cooperation in your research. You may use project grant funds from the Swedish Research Council to co-finance EU projects with a similar aim and direction. Indicate whether such coordination is being envisaged in the research plan.
- **Equipment:** Describe the basic equipment that you, and the team, will have at your disposal for the project.
- **Need for infrastructure:** Specify the need for international and national infrastructure within the project. Also specify the need for local infrastructure if such equipment depreciation costs

- are included in the application. Read more about research infrastructure supported by the Swedish Research Council.
- Other grants: If you intend to apply for several research grants, or if you have an ongoing grant awarded by the Swedish Research Council, you need to clarify how the projects relate to each other. You should also justify why you submit several applications.

Relevance

Research projects must be of relevance to the focus and objectives of the call, cf. description under the heading "Focus" above). The relevance description should give a short justification of the relevance of the project to the focus and objectives of the call.

The description may contain a maximum of 4,000 characters including blank spaces (equivalent to approximately one A4 page in Times New Roman, font size 12).

Budget and research resources

Under this tab, you are requested to include staffing costs, other costs and other project funding sources (where applicable).

Project staffing

Specify the dedicated time in the project (as a percentage of full-time employment) for all project staff members, both for participating researchers and other personnel. Your dedicated time as project leader, and also that of the participating researcher from a low-income or lower middle-income country, must equal at least 20 % of a full-time employment.

You must also include salaries for which you request funding, for yourself and/or other project staff members. Quote the amounts both in proportion to the full-time monthly salary and as actual annual earnings (including social security contributions). A person that you include in your salary request can, but does not have to, be one of the invited participating researchers. Quote the rounded amounts in SEK.

Other costs

Describe other project-related costs (e.g. rental and property charges, operating costs and depreciation costs). Quote the rounded amounts on an annual basis.

You may evoke depreciation costs relating to equipment that will be used in the project, provided that:

- The equipment has an economic life span of at least three years.
- The acquisition value of the equipment exceeds a certain threshold (please turn to your administrating organisation for information on the amount used by your department).
- The equipment need for the proposed project cannot be met by means of freely available national or international infrastructure.

Read more about research infrastructure supported by the Swedish Research Council.

You may only evoke the part of the depreciation costs that corresponds to the use of the equipment in the project for which you request funding. You may not evoke depreciation costs relating to equipment that is fully financed by means of other grants. If you have questions about what qualifies as local research infrastructure, acquisition values, or about how to calculate the depreciation costs, please contact your administrating organisation.

Total project cost

The application system will automatically add up the budget items that you enter in a table. The total amount requested shall also include indirect costs. You will have to add the indirect costs yourself into the table. In this section, you are also requested to add any other additional project costs (for which you do not request funding within the framework of this call).

For questions as to what qualifies as a direct or indirect cost, please contact your HEI.

Explanation of the proposed budget

Write a brief justification statement for each item in the proposed budget. The outline may contain a maximum of 4,000 characters including blank spaces (equivalent to approximately 1 A4 pages in Times New Roman, font size 12, single line spacing).

Other funding

List any other funding (either subject to an application or awarded) besides the funding requested under this call. Quote the rounded amounts in SEK.

Publications (pdf)

Under this tab, we ask you to attach your and the participating researchers' publications lists in a PDF format. Please observe that the appendix may only contain one file, with a maximum size of 10 MB. If the attachment contains several files, you will therefore have to join them into a single file.

Include publications made in the last eight years and mark the five publications on each researcher's list that are the most relevant to the project with an asterisk (*). Highlight the current researcher's name in bold. Sort the publications in each list under the following numbered headings in the given order:

- 1. Peer-reviewed original articles
- 2. **Peer-reviewed conference contributions** (the findings presented may not have been reported in other publications).
- 3. Monographs
- 4. Research review articles
- 5. Books and book chapters
- 6. Popular science publications including books/presentations

N.B.: You shall only include articles (or equivalent) that have been published or accepted for publication. The application cannot be complemented with publications after the call has closed.

Administrating organisation

Under this tab, you are requested to list the administrating organisation and the project site. The administrating organisation is the organisation that administers and accounts for the funds of the awarded project under the terms and conditions laid down. The project site is the organisational unit where the project will be based. The administrating organisation and the project site generally correspond to the HEI and the department where the project leader will be employed.

An application can only be linked to an administrating organisation with an approved Prisma account. Unless your administrating organisation already has such an account, you will have to ask it to apply for an organisation account with the Swedish Research Council.

Please contact your administrating organisation if your project site does not appear on the list. You have to provide the project site information to be able to finalize the registration of the application.

Review panels

Under this tab, you are requested to enter the review panel UF-SAR for assessment of your application.

Review panel

Participants

In this section, you may invite participating researchers and administrators to join the application. By participating researcher we refer to a person with a doctoral degree involved in the project and whose scientific merits and competence will be crucial for the implementation of the proposed research activities and will have a key role in the realization of the proposed research. You may include a maximum of six participating researchers in this application and at least one of these participating researchers must be from from a university or equivalent in a low-income or lower middle-income country. In addition, you must include at least one researcher who has a doctoral degree that is no more than seven years old at the deadline for the call, or funding for an unnamed PhD student or postdoc that has not been admitted at a Swedish HEI at the time of application. A participating administrator is a person, who does not take part in the project itself but can help you register and edit information in the application.

You may invite participants, who do not yet hold a Prisma account. Each one of them must however open a personal Prisma account to be able to contribute to your application.

All participants must accept the invitation and participating researchers must retrieve and enter their CV data into the application before you can finalize the application registration. Remember to make sure that you use the right email addresses when you send invitations to participants, and that each address is linked to invited person's Prisma account.

\mathbf{CV}

Under this tab, you are requested to retrieve and enter relevant CV data stored in your personal Prisma account. Participating researchers have to enter their respective CV data into the application.

The following information must always (where available) be provided in each CV and limited to the number specified:

- Education: Graduate studies, specialist degree, as well as basic and advanced education.
- **Professional history**: Current employment and longer relevant positions you have held, postdoctoral visits and research exchanges that are relevant for the described research and any longer interruption in the research that has affected your ability to qualify as a researcher.
- Merits and awards: Fellowship, supervised persons (postdocs and postgraduate students; indicate the total number for each category and indicate up to 10 persons that are most relevant), up to 10 of your most relevant awarded competitive grants, up to 10 of your most relevant awards and distinctions, as well as up to 20 potential other merits of relevance to the application.
- **Intellectual property:** E.g., patents and freely available computer programs that you have developed, please indicate up to 10 of your most relevant.

Registering the application

When you open the Registering the application tab, the system will perform a check to verify if any mandatory information is missing and inform you of any need for supplements. The application will not be registered unless you click the Register button.

Remember to use the preview function in order to double-check your application before submitting it!

N.B.: Please note that all invited participants must accept your invitation before you can proceed to register the application. Invitations that have not been accepted have to be removed.

The registered application can then be viewed in your personal Prisma account, under Applications and Applications and grants in the menu. If necessary, a registered application may be de-registered, edited and reregistered up to the call deadline.

You are responsible for ensuring that the application is complete, that is to say that the application form is filled out correctly, the required appendices are submitted, and that the requested information is provided in accordance with the instructions. We ask you to only submit specifically requested information. After the closing date, application addenda will only be accepted in cases where we have asked for supplements.

Signing the application

When you register the application, it will automatically be signed by you in your capacity of project leader. The application must also be signed by the official representative of the administrating organisation in order for it to be considered complete and be processed further in the review process. This representative is normally the head of the department where the research will be conducted, but that will depend on the organisational structure of your administrating organisation.

The signature *of the applicant* confirms that:

 The information contained in the application is correct and in line with the instructions from the Swedish Research Council.

- Any side-line occupation and/or commercial ties have been reported to the administrating organisation, and that no conflict with the principles of good research practice has been established.
- The necessary permits and approvals are in place at the start of the project, e.g. concerning the ethical review.

The signature of the administrating organisation confirms that:

- The organisation will accommodate the research and the equipment, and employ the applicant during the time period and to the extent presented in the application.
- The organisation approves the cost estimate presented in the application.
- The project will be conducted in accordance with Swedish law.

The parties must have discussed the above-mentioned points before the representative of the administrating organisation approves and signs the application.

N.B.: The official representative of the administrating organisation must have signed the application in Prisma within a week (seven calendar days) of the application deadline for it to be considered further in the review process.

What happens next?

When the call closes (at 2:00 PM on the final day for submission of applications), the registered application will automatically become final and given a registration number.

Your registered application will automatically be forwarded to the official representative of the administrating organisation, who shall sign the application within a week (seven calendar days) of the application deadline. You will receive an auto-generated email when the application has been signed.

You will find information about the status of the application, the registration number and the application signature under the tab Applications and grants in your account.

Scientific evaluation

The scientific assessment of the application will be made by active researchers. These peer reviewers evaluate each application (in competition with the other applications) on the basis of the assessment criteria established by the Swedish Research Council.

If an application does not comply with the instructions, this will be taken into account in the application review.

How your application is evaluated

The Swedish Research Council's conflict of interest policy

The Swedish Research Council's gender equality strategy □

Decisions

Shortly after the grant funding decisions have been taken, information on the awarded grants will be published on the web page of the Swedish Research Council. After that, a notification of decision and a final statement for your application can be found in your personal account under the tab Applications and grants. The final statement contains the application grading and, in some cases, written comments.

N.B.: As from 12 October 2015, anyone who uses genetic resources (genetic material of actual or potential value) and traditional knowledge pertaining to genetic resources, which were accessed after 12 October 2014, shall follow the EU ABS declaration and declare that the resource and the knowledge used have been obtained in line with the applicable legislation, and distribute any benefit deriving from the use thereof in a fair and reasonable way. This only applies for granted applications.

Exceptions apply to human genetic resources, material covered by the International Treaty on Plant Genetic Resources for Food and Agriculture, material included in the WHO's Pandemic Influenza Preparedness Framework and genetic material obtained from the Deep Seas.

For questions about the EU ABS declaration, please contact the Swedish Environmental Protection Agency (information in Swedish).

Contact

For questions relating to the application content:

For questions relating to the application content, please email or call the contact person listed below.

Dan Wilhelmsson, e-mail: <u>Dan.Wilhelmsson@vr.se</u>; telephone: +46 (8) 546 44 032

Anna Herou, e-mail: anna.herou@vr.se; telephone: +46 (0)8-546 44 359

Technical questions

We kindly ask you to first consult the help menu in the Prisma system, where you will find instructions and <u>FAQs</u> as well as a detailed <u>user manual</u>, which describe most of the required steps in Prisma.

If you cannot find the answer to your technical question in the above-mentioned information material, please contact <u>our technical support team</u>. Please note that depending on the workload, it may take up to 1-2 working days before you get a reply.