DESCRIPTION

Motivation for Global Food Security arose from concern about the difficulty scientists and policy makers have in keeping up with the expanding volume of information about the challenge of meeting human food and nutritional needs while protecting environmental services. Hence, the Journal aims to provide readers with:

1. Strategic views of experts from a wide range of disciplinary perspectives on prospects for ensuring food security, based on the best available science, in a clear and readable form for a wide audience, bridging the gap between biological, social and environmental sciences.
2. Reviews, opinions and debates that synthesize, extend and critique research approaches and findings from the rapidly growing body of original publications on global food security.

If you are interested in submitting an article to the journal, please send an abstract to the Editor-in-Chief: Professor Derek Byerlee dbyerlee@gmail.com.

Global Food Security aims to publish papers that contribute to better understanding of economic, social, biophysical, technological, and institutional drivers of current and future global food security.

Global Food Security aims to stimulate debate that is rooted in strong science, has strong interdisciplinary connections, and recognizes tradeoffs that occur in reconciling competing objectives and outcomes that may differ depending on spatial and temporal scale.

While integration across academic disciplines is encouraged, papers on components of Global Food Security will also be considered if they address important constraints and have a broad inference space. The goal is to publish concise and timely reviews and synthesis articles about research on following elements of food security:

- **Availability** (sufficient quantity and quality)
- **Access** (affordability, functioning markets and policies)
- **Nutrition, Safety** and **Sanitation**
- **Stability** and **Environment** (resilience and ecosystem services)

Distinguishing features of Global Food Security content are: (a) issues that contain several papers that address specific, timely topics of importance to food security, (b) authors who are recognized authorities in their field, (c) a focus on food security challenges in an interdisciplinary manner and at
national to global scales, and (d) a focus on challenging current paradigms, seeking to provide out-
of-the box thinking on global issues.

Given this focus, *Global Food Security* will be an invaluable source of information for researchers, lecturers, teachers, students, professionals, policy makers and the international media.

**AUDIENCE**

Academics and practitioners involved in work related to food security, in particular agricultural and food scientists, agricultural and development economists, nutritionists, political scientists, sociologists, and public policy analysts.

**IMPACT FACTOR**

2016: 3.527 © Thomson Reuters Journal Citation Reports 2017

**ABSTRACTING AND INDEXING**

AGRICOLA
Agricultural Engineering Abstracts
Current Contents/Agriculture, Biology & Environmental Sciences
Environmental Abstracts
GEOBASE
Nutrition Abstracts
Science Citation Index
Scopus
Journal Citation Reports - Science Edition

**EDITORIAL BOARD**

*Editor-in-Chief*
Derek Byerlee, Georgetown University, Washington, District of Columbia, USA

*Editors*
Saul Cunningham, Fenner School of Environment and Society, Australian National University, Canberra, Australian Capital Territory, Australia
Achim Dobermann, Rothamsted Research, Harpenden, Hertfordshire, UK
Jessica Fanzo, Johns Hopkins University, Washington, Washington, USA
Keijiro Otsuka, Graduate School of Economics, Kobe University, Kobe, Japan
Steve Staal, International Livestock Research Institute (ILRI), Nairobi, Kenya

*Editorial Board*
M. Broadley, School of Biosciences, The University of Nottingham, Sutton Bonington, Leicestershire, England, UK
K. Brooks, International Food Policy Research Institute, Washington DC, Washington, USA
J. Coates, Friedman School of Nutrition, Tufts University, Boston, Massachusetts, USA
M. Demont, Social Sciences Division, International Rice Research Institute (IRRI), Los Baños, Philippines
C. Doss, Oxford Department of International Development, University of Oxford, Oxford, UK
B. Gemmill-Herren, World Agroforestry Centre, USA
K. Giller, Wageningen Universiteit, Wageningen, Netherlands
D. Grace, International Livestock Research Institute (ILRI), Nairobi, Kenya
P. Grassini, Department of Agronomy and Horticulture, University of Nebraska at Lincoln, Lincoln, Nebraska, USA
S. Henson, Department of Food, Agricultural and Resource Economics, University of Guelph, Canada
M. Herrera, Agriculture Flagship, CSIRO, St. Lucia, Australia
S. Heuer, Australian Cntr. for Plant Functional Genomics, University of Adelaide, Adelaide, Australia
A.Y. Hoekstra, Water Management, University of Twente, Enschede, Netherlands
J. Huang, School of Advanced Agricultural Sciences, Peking University, Beijing, China
A. Jones, Department of Nutritional Sciences, School of Public Health, University of Michigan, Ann Arbor, Michigan, USA
J. Kirsten, Bureau for Economic Research, Stellenbosch University, Stellenbosch, South Africa
INTRODUCTION

Global Food Security

Motivation for *Global Food Security* arose from concern about the difficulty for scientists and policy makers to keep up with the expanding volume of information published about the challenge of meeting human food and nutritional requirements while protecting environmental services. Hence, the Journal aims to provide readers with:

1. Strategic views of experts from a wide range of disciplinary perspectives on prospects for ensuring food security, based on the best available science, in a clear and readable form for a wide audience, bridging the gap between biological, social and environmental sciences.
2. Reviews, opinions and debates that synthesize, extend and critique research approaches and findings from the rapidly growing body of original publications on global food security.

*Global Food Security* aims to publish papers that contribute to better understanding of economic, social, biophysical, technological, and institutional drivers of current and future global food security.

*Global Food Security* aims to stimulate debate that is rooted in strong science, has strong interdisciplinary connections, and recognizes tradeoffs that often occur as a result of reconciling competing objectives and outcomes that may differ depending on spatial and temporal scale.

While integration across academic disciplines is encouraged, papers on components of *Global Food Security* will also be considered if they address important constraints and have a broad inference space. The goal is to publish concise and timely reviews and synthesis articles about research on following elements of food security:

- Availability (sufficient quantity and quality)
- Access (affordability, functioning markets and policies)
- Safety, Nutrition and Sanitation
- Stability and Environment (resilience and ecosystem services)

Distinguishing features of *Global Food Security* content are: (a) issues that contain several papers that address specific, timely topics of importance to food security, (b) authors who are recognized authorities in their field, (c) a focus on food security challenges in an interdisciplinary manner and at national to global scales, and (d) a focus on challenging current paradigms, seeking to provide out-of-the box thinking on global issues.

Given this focus, *Global Food Security* will be an invaluable source of information for researchers, lecturers, teachers, students, professionals, policy makers and the international media.

If you have an idea for a review or a Special Issue please submit a short proposal describing the issues to be covered and the substance behind the analysis to the Editorial Manager Joanna Aldred at j.aldred@elsevier.com

**TYPES OF ARTICLE**

Criteria for Papers for Global Food Security

**Review papers**(the major product of this journal)
Addresses an issue related to agriculture, nutrition, or the environment of relevance to global food security as defined on the journal web site. Preferably multidisciplinary and relatively non-technical so it is does not require deep disciplinary knowledge to understand. Not country specific although exceptions may be made for very large countries on issues that effect global food security, or for a review of a country experience that is highly relevant to other countries. 5500 word limit.

(please choose Article Type "Review" in EVISE when submitting your article)

**Original research**
Addresses an issue related to agriculture, nutrition, or the environment of relevance to food security as currently defined on the journal web site. Preferably multidisciplinary and relatively non-technical so it does not require deep disciplinary knowledge to understand (e.g., avoids complex econometrics or crop models). Results that can be summarized in a few simple tables or figures. More detailed results may be included in supplementary materials. Not country specific but covers multiple countries, a region, or the world. Papers on a large country that explores links to global food security may be considered. 5500 word limit.

(please choose Article Type FLA "Invited Research Article" in EVISE when submitting your article)

**Perspectives**

Addresses an emerging topic or debate on global food security. Various types builds on a major body of work in which the author has been involved, such as an international panel report, conference, or a major study. Questions conventional wisdom through an evidence-based approach. Outlines gaps in our knowledge and needed research. Authored by a well-known authority on the subject. Relatively short—may be a maximum of 2500 words. Light and timely review, often by the Editors.

(please choose Article Type SSU "Perspective Article" in EVISE when submitting your article)

**Special issues**

Requires a proposal with a one-page rationale for the issue, the names and bios of the guest editors, and the authors, titles and abstracts of proposed papers. Well-recognized guest editors with a good publication record. Topic of importance to global food security with global or regional coverage. Papers may be reviews or original research as defined above. Maximum of 12 published papers per issue. 5500 word limit per paper plus an overview of about 2500 words.

If after reviewing these criteria you are interested in submitting an article to the journal, please send an abstract to the Editor-in-Chief: Professor Derek Byerlee dbyerlee@gmail.com.

**BEFORE YOU BEGIN**

**Ethics in publishing**

Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.

**Declaration of interest**

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. If there are no conflicts of interest then please state this: 'Conflicts of interest: none'. More information.

**Submission declaration and verification**

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis or as an electronic preprint, see 'Multiple, redundant or concurrent publication' section of our ethics policy for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service CrossCheck.

**Changes to authorship**

Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.
Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

**Copyright**

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (more information). Permitted third party reuse of open access articles is determined by the author's choice of user license.

**Author rights**

As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing

Find out how you can share your research published in Elsevier journals.

**Role of the funding source**

You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

**Funding body agreements and policies**

Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the Open Access Publication Fee. Details of existing agreements are available online.

**Open access**

This journal offers authors a choice in publishing their research:

**Open access**

- Articles are freely available to both subscribers and the wider public with permitted reuse.
- An open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

**Subscription**

- Articles are made available to subscribers as well as developing countries and patient groups through our universal access programs.
- No open access publication fee payable by authors.

Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.

For open access articles, permitted third party (re)use is defined by the following Creative Commons user licenses:
Creative Commons Attribution (CC BY)
Let others distribute and copy the article, create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), include in a collective work (such as an anthology), text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author's honor or reputation.

Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)
For non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

The open access publication fee for this journal is **USD 2500**, excluding taxes. Learn more about Elsevier's pricing policy: [http://www.elsevier.com/openaccesspricing](http://www.elsevier.com/openaccesspricing).

Green open access
Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see our [green open access page](http://www.elsevier.com/openaccess) for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution's repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form. [Find out more.](http://www.elsevier.com/openaccess)

This journal has an embargo period of 24 months.

Elsevier Publishing Campus
The Elsevier Publishing Campus ([www.publishingcampus.com](http://www.publishingcampus.com)) is an online platform offering free lectures, interactive training and professional advice to support you in publishing your research. The College of Skills training offers modules on how to prepare, write and structure your article and explains how editors will look at your paper when it is submitted for publication. Use these resources, and more, to ensure that your submission will be the best that you can make it.

Language (usage and editing services)
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop.

Submission
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Submit your article
**Submission is by invitation only**

Please submit your article via

If you have an idea for a review that you would like to write please submit this to the Editorial Manager Derek Byerlee at db1184@georgetown.edu

Reviewers
Please submit, with the manuscript, the names, addresses and e-mail addresses of 4 potential reviewers and indicate briefly per reviewer what the relevant expertise of the reviewer is. Note that the editor retains the sole right to decide whether or not the suggested reviewers are used.

**PREPARATION**
**Peer review**

This journal operates a single blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. More information on types of peer review.

**Use of wordprocessing software**

It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. can be used. Do not embed "graphically designed" equations or tables, but prepare these using the word processor's facility. When preparing tables, if you are using a table grid, use only one grid for each individual column and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. Do not import the figures into the text file but, instead, indicate their approximate locations directly in the electronic tekst just like the location of tables. See also the section on Electronic illustrations.

To avoid unnecessary errors you are strongly advised to use the "spell-check" and "grammar-check" functions of your word processor.

Manuscripts should be prepared with numbered lines, with wide margins and double spacing throughout, i.e. also for abstracts and references. Every page of the manuscript, including the title page, references, tables, etc. should be numbered. Avoid excessive use of italics to emphasize part of the text.

**Word Limit**

The general length limit of the text is 5500 words (excluding references, any appendices, tables and figure captions). Papers longer than this will be returned to the author with a request to reduce the text to the required length and resubmit. The total number of references is suggested not to exceed 50.

**Article structure**

**Title**

Titles should be short and enticing (no more than ten words). (See also below: Essential title page information)

**Organisation**

The Introduction should be aimed at a non-specialist audience. Please indicate the timeliness and rationale for your article (i.e. why the subject is important; why now). Use concise logical Subheadings and provide clear links between sections. Please end with a brief summary of your article, a strong take-home message and include a clear indication of future work.

**Text Box**

Ideal for providing explanations of basic concepts or theories, giving detailed mechanisms or discussing case studies. Text Boxes can occasionally contain small figures and tables. Length, 400 words maximum per Text Box (refs. to be listed in main reference list only). No more than 4 Text Boxes per article.

**Subdivision - numbered sections**

Divide your article into clearly defined and numbered sections. The abstract is not included in section numbering, so the Introduction is section 1. Subsections should also be numbered (for instance 2.1 (then 2.1.1, 2.1.2, 2.2, etc.) Do not use more than three levels of numbering. Use the section numbering also for internal cross-referencing, if necessary. Any subsection should be given a brief heading. Each heading should appear on its own separate line.

**Abstract**

All reviews should be prefaced by an abstract of 100-120 words. The abstract is important: it should contain sufficient information for the reader to be able to appreciate the relevance of the full article when read alone. It should include background information and specific examples of recent advances, rather than promises that a particular subject 'will be discussed' - the scope of the review should instead appear at the end of the introduction. References should not be included. Abbreviations should be avoided as far as possible.
Graphical abstract
Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view Example Graphical Abstracts on our information site. Authors can make use of Elsevier’s Illustration Services to ensure the best presentation of their images and in accordance with all technical requirements.

Highlights
Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point). You can view example Highlights on our information site.

Keywords
Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Abbreviations
Define abbreviations that are not standard in this field in the text at first use. Ensure consistency of abbreviations throughout the article.

Acknowledgements
Collate acknowledgements in a separate section at the end of the article just before the References section. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc. ans institutions that provided funding for the research.

Formatting of funding sources
List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Nomenclature and Units
Follow internationally accepted rules and conventions: use the international system of units (SI). If other units are mentioned, please give their equivalent in SI.

Authors and Editor(s) are, by general agreement, obliged to accept the rules governing biological nomenclature, as laid down in the International Code of Botanical Nomenclature, the International Code of Nomenclature of Bacteria, and the International Code of Zoological Nomenclature.

All biotica (crops, plants, insects, birds, mammals, etc.) should be identified by their scientific names when the English term is first used, with the exception of common domestic animals.

All biocides and other organic compounds must be identified by their Geneva names when first used in the text. Active ingredients of all formulations should be likewise identified.
For chemical nomenclature, the conventions of the *International Union of Pure and Applied Chemistry* and the official recommendations of the *IUPAC-IUB Combined Commission on Biochemical Nomenclature* should be followed.

**Math Formulae**
Present simple formulae in the line of normal text where possible. In principle, variables are to be presented in italics. Subscripts and superscripts should be clear.
Greek letters and other non-Roman or handwritten symbols should be explained in the margin where they are first used. Take special care to show clearly the difference between zero (0) and the letter O, and between one (1) and the letter l.
Give the meaning of all symbols immediately after the equation in which they are first used. For simple fractions use the solidus (/) instead of a horizontal line.
Equations should be numbered serially at the right-hand side in parentheses. In general only equations explicitly referred to in the text need be numbered.
The use of fractional powers instead of root signs is recommended. Also powers of e are often more conveniently denoted by exp.
Levels of statistical significance which can be mentioned without further explanation are: *P <0.05, **P <0.01 and ***P <0.001.
In chemical formulae, valence of ions should be given as, e.g., Ca2+, not as Ca++. Isotope numbers should precede the symbols, e.g., 18O.

**Footnotes**
Footnotes are not generally acceptable in the main body of a Global Food Security manuscript. Any information that is essential to understanding should be incorporated into the text. Footnotes can be used within tables.

**Figures and Tables**
Authors are requested to include at least 2 and a maximum of 8 figures or tables to illustrate their work.

**Electronic artwork**
**General points**
- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.
A detailed *guide on electronic artwork* is available.

**You are urged to visit this site; some excerpts from the detailed information are given here.**

**Formats**
If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.
Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):
- EPS (or PDF): Vector drawings, embed all used fonts.
- TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
- TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
- TIFF (or JPEG): Combinations bitmapped line/halftone (color or grayscale), keep to a minimum of 500 dpi.

**Please do not:**
- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.
Color artwork
Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color on the Web (e.g., ScienceDirect and other sites). For further information on the preparation of electronic artwork, please see http://www.elsevier.com/artworkinstructions.

Figure captions
Ensure that each illustration has a caption. Supply captions separately, but place them also below the figure. A caption should comprise a brief description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

Tables
Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

References
Citation in text
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Unpublished results and personal communications are not recommended in the reference list, but may be used. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either "Unpublished results" or "Personal communication" Citation of a reference as "in press" implies that the item has been accepted for publication. Minimize references to non-English publications as these are not easily accessible for the majority of the readership.

Reference links
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is encouraged.

A DOI can be used to cite and link to electronic articles where an article is in-press and full citation details are not yet known, but the article is available online. A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

References in a special issue
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.
Reference management software

Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley and Zotero, as well as EndNote. Using the word processor plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/global-food-security

When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference formatting

There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

Reference style

Text: All citations in the text should refer to:
1. Single author: the author's name (without initials, unless there is ambiguity) and the year of publication;
2. Two authors: both authors' names and the year of publication;
3. Three or more authors: first author's name followed by 'et al.' and the year of publication.

Citations may be made directly (or parenthetically). Groups of references should be listed first alphabetically, then chronologically.

Examples: 'as demonstrated (Allan, 2000a, 2000b, 1999; Allan and Jones, 1999). Kramer et al. (2010) have recently shown ....'

List: References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Examples:
Reference to a journal publication:
Reference to a book:
Reference to a chapter in an edited book:
Reference to a website:
Reference to a dataset:

Journal abbreviations source

Journal names should be abbreviated according to the List of Title Word Abbreviations.

Supplementary material

Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, high-resolution images, background datasets, detailed model descriptions, sound clips and more. Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier Web products, including ScienceDirect: http://www.sciencedirect.com. In order to ensure
that your submitted material is directly usable, please provide the data in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our artwork instruction pages at http://www.elsevier.com/artworkinstructions

**RESEARCH DATA**

This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

**Data linking**

If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that give them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

**Mendeley Data**

This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. Before submitting your article, you can deposit the relevant datasets to Mendeley Data. Please include the DOI of the deposited dataset(s) in your main manuscript file. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the Mendeley Data for journals page.

**Data statement**

To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

**ARTICLE ENRICHMENTS**

**AudioSlides**

The journal encourages authors to create an AudioSlides presentation with their published article. AudioSlides are brief, webinar-style presentations that are shown next to the online article on ScienceDirect. This gives authors the opportunity to summarize their research in their own words and to help readers understand what the paper is about. More information and examples are available. Authors of this journal will automatically receive an invitation e-mail to create an AudioSlides presentation after acceptance of their paper.
**Google Maps and KML files**

KML (Keyhole Markup Language) files (optional): You can enrich your online articles by providing KML or KMZ files which will be visualized using Google maps. The KML or KMZ files can be uploaded in our online submission system. KML is an XML schema for expressing geographic annotation and visualization within Internet-based Earth browsers. Elsevier will generate Google Maps from the submitted KML files and include these in the article when published online. Submitted KML files will also be available for downloading from your online article on ScienceDirect. [More information.](#)

**Interactive plots**

This journal enables you to show an Interactive Plot with your article by simply submitting a data file. [Full instructions.](#)

**Submission checklist**

It is hoped that this list will be useful during the final checking of an article prior to sending it to the journal's Editor for review. Please consult this Guide for Authors for further details of any item.

**Ensure that the following items are present:**

- E-mail address
- Full postal address
- Telephone and fax numbers
- Indication of corresponding Author
- Keywords
- Full text
- All tables (including title and footnotes)
- All tables (including title)

**Further considerations**

- Manuscript has been "spellchecked" and "grammar-checked"
- References are in the correct format for this journal
- All references mentioned in the Reference list are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources (including the Web)
- Color figures are clearly marked as being intended for color reproduction on the Web (free of charge) and in print or to be reproduced in color on the Web (free of charge) and in black-and-white in print
- If only color on the Web is required, black and white versions of the figures are also supplied for printing purposes

For any further information please visit our customer support site at service.elsevier.com..

**AFTER ACCEPTANCE**

**Online proof correction**

Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.

If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

**Offprints**

The corresponding author will, at no cost, receive a customized [Share Link](#) providing 50 days free access to the final published version of the article on [ScienceDirect](#). The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's [Webshop](#). Corresponding authors who have published their article open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.
AUTHOR INQUIRIES
Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch. You can also check the status of your submitted article or find out when your accepted article will be published.

© Copyright 2014 Elsevier | http://www.elsevier.com