



Deliverable D. 6.2

Framework for Gender+ Integration in Research, Education and Funding

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Contents

ACKNOWLEDGEMENTS	3
Version History.....	3
List of Acronyms.....	4
Gender+ related terminology	5
1. Introduction	7
1.1 Context: WP 6 Integration of Gender+ in Funding, Research and Teaching	7
1.2 WP 6.2 Framework on Gender+ Integration in Research, Education and Funding.....	8
1.3 Set-up.....	10
2. Framework grounding: identification of gender+ aspects	12
2.1 Equal opportunities in research / Gender+ in research content.....	12
2.2 Gender+ in research teams	13
Background of researchers	13
Qualifying gender+ in research team positions and team work	13
2.3 Gender+ in research content.....	14
Research Infrastructure to include Funding and Education	14
Gender+ in historical contexts of Food, Agricultural and Life Sciences.....	14
3. Gender+ in Food, Agricultural and Life Sciences Contents	16
3.1 ‘Science for impact’ at the crossroads of life and social sciences	16
3.2 Interrelated dimensions in food, agricultural and life sciences.....	16
3.3 Illustrations of gender+ integration in research in Annex 1	18
4. From gender-blind to gender-transformative approaches.....	19
4.1 Transformative approaches and the gender change continuum	19
4.2 Transformative gender approaches.....	21
4.3 Combination in levels of Gender+ integration	25
5. Final remarks and trajectory steps:.....	26
References.....	27
ANNEX 1. Illustrations for gender+ integration	30
A 1.1 Gender-responsive breeding	30
A 1.2 Gender integration in Climate smart agriculture (CSA)	34
A 1.3 Gender in Agricultural Mechanisation.....	36
A 1.4 Gender integration in farming systems research	38
A 1.5 Wider system contexts included for transformative approaches	41
ANNEX 2. Illustrations of various gender+-approaches.....	42

A 2.1 Case stories illustrating various gender+ approaches.....	42
A 2.2 Checklist to identify various gender+ approaches.....	44
ANNEX 3. Analysis of level of gender+ integration. Score table.....	47
ANNEX 4. Trajectory towards sustainable gender+ integration.....	48

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Version History

Version	Status	Date	Contributor/Partner	Summary of changes
	Ppt	9 October 2019	Margreet van der Burg / WUR	Outline discussed with partners in Paris with presented PPT
V.1	Draft	18 November 2019	Margreet van der Burg / WUR	Skype with partners concerning set-up document with draft parts presented
V.2	Draft	21 November 2019	Margreet van der Burg / WUR	Stepwise introduction to the field, useful to various levels of gender+ integration
V.3	Draft	28 November 2019	Margreet van der Burg / WUR	Based on comments by Lut Mergaert, Magalie Jannoyer, Francisco Hinojal Juan: Selection and adjustment of boxes and examples to research needs; Also additional writing and restyling where still needed
V.4	Final	30 November 2019	Margreet van der Burg / WUR	Based on comments by Magalie Jannoyer and Jane Kavanagh: Parts of text in Annex, sharpening rationale

List of Acronyms

ANR	Agence Nationale pour la Recherche (FR)
AR4D	Agricultural Research for Development
CGIAR	Consortium (Consultative Group) of International Agricultural Research Institutes
CICYTEX	Centro de Investigaciones Científicas y Tecnológicas de Extremadura (ES)
CIHEAM Bari	Centro Internazionale di Altistudi Agronomici Mediterranei (IT)
CIRAD	Center de coopération International en Recherche Agronomique pour le
CSA	Climate Smart Agriculture
CUT	Cyprus University of Technology (CY)
GEP	Gender Equality Plan
EC	European Commission
EU	European Union
FAO	Food and Agricultural Organisation, Organisation of the United Nations
ISAS	Institute of Sociology of the Academy of Sciences of the Czech Republic (CR)
RFO	Research Funding Organisation
RPO	Research Performing Organisation
Teagasc	Agriculture and food development authority (IE)
WP	Work Package
WUR	Wageningen University & Wageningen Research (NL)
YW	Yellow Window (BE)

Gender+ related terminology

SEX refers to the biologically determined characteristics of men and women. As such, sex is globally understood as the classification of living things as male, female, or intersex. (based on EC 2014)

GENDER refers to the social construction of women and men, of femininity and masculinity, which varies in time and place, and between cultures. (EC 2014)

GENDER RELATIONS are the ways in which a society defines rights, responsibilities and the identities of men and women in relation to one another. Gender relations are based on power and negotiations, and gender roles are closely linked, influencing the definition and development of one another. (FAO 2012)

GENDER NORMS refer to the gender dimensions of social norms, or the societal expectations of how men and women ought to behave in their everyday affairs. Social norms also “structure social interactions in ways that allow social actors to gain the benefits of joint activity. And they determine in significant ways the distribution of the benefits of social life” (Petesch et al. 2018, with reference to Knight and Ensminger 1998).

GENDER+ DIMENSION or INTERSECTIONALITY acknowledges the heterogeneity among women and among men by examining the gender dimension as intersecting with other social dimensions to which as similar as to gender also social values of more or less superiority or inferiority are attached. These dimensions intersecting with the sex/gender dimension are likely to be found in age/generation, class/wealth, race/ethnicity, geographical location (e.g. urban/rural), religion, civic status, sexuality, health status. Identities, relations and institutional structures often reflect the value loaded attributions and internalisations to these dimensions which possibly complicate and aggravate gender inequalities.

GENDER EQUALITY refers to the situation where individuals of all sexes are free to develop their personal abilities and make choices without the limitations imposed by strict gender roles. The different behaviours, aspirations and needs of women and men are considered, valued and favoured equally. (based on EC 2014)

EQUAL OPPORTUNITY indicates the absence of barriers to economic, political and social participation on the grounds of sex, often intersecting with other socially made distinctions. Such barriers are often indirect, difficult to discern and caused by structural phenomena and social representations that have proved particularly resistant to change. Equal opportunities, which is founded on the rationale that a whole range of actions are necessary to redress deep-seated sex and gender-based as well as other inequities, should be distinguished from equal treatment, which merely implies avoiding direct discrimination. (based on EC 2014)

GENDER MAINSTREAMING refers to the systematic integration of equal opportunities for women and men into the organization and its culture and into all programmes, policies and practices; into ways of seeing and doing. (EU Commission, 2000)

GENDER ACCOMMODATING APPROACH acknowledges but work around gender differences and inequalities to achieve project objectives. May result in the short term realize benefits and outcomes for women but does not attempt to reduce gender inequality or address the gender

systems that contribute to differences and inequalities (Danielsen et al. 2018, with reference to IGWG 1997)

GENDER TRANSFORMATIVE APPROACH seeks to transform gender relations to promote gender equality by:

1. fostering critical examination of inequalities and gender roles, norms and dynamics;
2. recognizing and strengthening positive norms that support equality and an enabling environment;
3. promoting the relative position of women, girls and marginalized groups, and transforming the underlying social structures, policies and broadly held social norms that perpetuate gender inequalities (Danielsen et al. 2018, with reference to IGWG 1997).

GENDER EXPLOITATIVE APPROACH intentionally or unintentionally reinforces or take advantage of gender inequalities and stereotypes in pursuit of project outcome, or whose approach exacerbates inequalities (Danielsen et al. 2018, with reference to IGWG 1997)

EMPOWERMENT refers to the access to resources and development of personal capacities to be able to participate actively in shaping one's own life and that of the community in economic, social and political terms. (European Commission 1998)

MONITORING refers to the continuous assessment of project implementation in relation to agreed schedules and of the use of inputs, infrastructure, and services. (WB 2012)

EVALUATION refers to the periodic assessment of the relevance, performance, efficiency, and impact (expected and unexpected) of the project in relation to stated objectives.(WB 2012)

1. Introduction

This document D 6.2 presents a framework to the aimed Gender⁺ Integration in Research, Education and Funding within the Gender-SMART project under Work Package 6. The framework is aligned to the results from the Gender audits from the Gender-SMART implementing partners that were compiled in Document D 6.1. It will be piloted and further developed during the project and be assessed and adjusted.

The focus of the framework is the domain of Food, Agricultural and Life Sciences. This domain includes research, education and outreach related to crops, livestock, fishing, forestry, garden production, trees, soil, natural resources, food, biofuels, and related production processes and their management, such as natural resource management including water management, postharvest processing, supply and added value chains, and markets and consumption. (e.g. Meinzen-Dick et al. 2010)

This document is drafted by WP 6 task leader Wageningen University & Research (WUR), Netherlands, and reviewed by the partners, and with special attention by designated review partner CICYTEX, Spain.

Gender-SMART connects seven European RP/FOs that are committed to develop and implement their own Gender Equality Plans. These are conceptualized as drivers to institutional change after having identified the partner specific challenges in tackling barriers and building on options and opportunities to:

- improve recruitment procedures and career support to optimally include female researchers;
- advance institutional governance up to decision making processes concerning all related issues that reverse gender imbalances in representation and voices heard;
- strengthen the gender⁺ dimension¹ in research, education and funding, both in programming and performance assessments.

Gender-SMART understands these challenges as an integral part of the broader issue of Responsible Research and Innovation (RRI). Indeed, since gender⁺ points at intersectionality, Gender SMART acknowledges interlinkages between social dimensions and certainly goes beyond a 'women only' perspective or lens.

1.1 Context: WP 6 Integration of Gender⁺ in Funding, Research and Teaching

Gender-SMART connects project partners with a focus on the Food, Agricultural and Life Sciences. This field is of specific relevance to urgent societal challenges of a global scale such as climate change and food security. As some partners include development research (e.g. Agricultural

¹gender⁺ dimension stands for intersecting the gender dimension with other social dimensions such as class /wealth, race/ethnicity, religion, age/generation, locality (e.g. urban/rural) etc.

Research for Development or AR4D) or highlight ‘science for impact’ with respect to the Sustainable Development Goals (SDGs), Gender-SMART covers a wide range outlook to ensuring the fortification of gender+ expertise and the integration of the gender+ dimension in mainstream curricula, research and their funding in this science domain. It responds to especially the lack of trained scholars and in-depth research and educational tracks in this field as identified by both Europe oriented research and international agricultural research institutes.

Gender-SMART acknowledges that there is ample empirical evidence that adopting a gender+ lens enhances research excellence and improves the validity of most research results. This does not only apply to human-centred research, but to all areas and disciplines since these all mostly affect human beings directly or indirectly. The overall aim of WP 6 can be summarized as developing the integration of gender+ dimension in funding, research and teaching as a mark of excellence. For this, existing gender+ expertise as well as gender+ integration need to be assessed and strengthened in order to enhance its institutional professionalization, embeddedness, visibility, profile, and consolidation. WP 6 of the Gender-SMART project therefore also covers developing and testing pathways not only to ensure developing awareness but also to enhance skills to integrate gender+ in general and field-specific knowledge production, assessments and teaching. Intersectionality will be included by acknowledging gender+ dimensions that both breaks with a ‘women only’ perspective or lens as well as with addressing men or women as homogeneous groups.

Addressing the gender+ dimension(s) in research and teaching and their funding, also challenges how knowledge production has been developed. For instance, it questions the standards commonly accepted for research excellence. Developing gender+ sensitive research and teaching, and their funding programmes and projects, as well as mainstreaming gender in existing programmes and projects are not only crucial activities vital to science and innovation with and for society. These also provide research and academic communities with a broader and more in-depth understanding and outreach opportunities of how to address the gender+ dimension. These also include also internal organizational gender biases and inequalities, constraints and opportunities, and thus can directly help strengthening engagement and ownership in sustainably developing and implementing institutional Gender-SMART strategies.

1.2 WP 6.2 Framework on Gender+ Integration in Research, Education and Funding

To prepare a common rationale and framework under WP task 6.2, each implementing partner first reviewed its own current status of structural and occasional provisions and successes in the integration of gender+ in current funding schemes, research programmes and educational curricula. The results are compiled in Gender-SMART document D 6.1² based on the guidelines provided

² This is an internal document called: D 6.1. Gender+-integration in Research, Education and Funding - Audits of Gender-SMART partners, by M. van der Burg (WUR), A. Georgiadou (CUT); L. Guyard and A. Zeller (ANR); J.-M. Sourisseau, E. Bouquet (CIRAD); C. Ciannamea, M. El Moujabber, E. Lapedota, M. Marini, R. Quagliariello (CIGIAM Bari); D. Kilgallon, J. Kavanagh (TEAGASC); F. Hinojal, F. Martínez, B. Álvarez, R.I Cañada, I. Navarro, M. Nieto (CICYTEX), Sept. 2019

within Task 6.1³. The partners were guided to the analysis of documents, statistical data, interviews and focus groups discussions. Each one was invited to integrate as best as possible its own specific organizational and research characteristics to better identify its own venues for improving the integration of gender+ in funding, research and teaching:

- The current articulated and informal policies on gender+ expertise and its integration in research, education and funding at their institution;
- the current status or performance of gender+ expertise and its integration at their institution;
- what approaches to gender+ integration and expertise are articulated formally and adhered informally on various levels of the institution, and
- what options and opportunities are brought forward to build on to articulate gender+ expertise and its integration formally and translate in practice into funding, research and education on various levels of programming, and selection, monitoring and assessment criteria.

Indicators are instrumental for comparison over time and between institutions. For WP task 6.1 the specific WP 6 indicators were elaborated in a check list as annex 2 to the guidelines for WP 6.1 which were meant to be used for monitoring purposes during the project and after as well. Not all partners had readily available data to process or only had few incidents to list. All partners indicated what gaps they encountered. As far as these were not addressed in the partner reviews yet, this framework requires partners to select the most relevant for them and to still do so as part of the evaluation and monitoring procedures for a sustainable integration in the future. Below the main indicators are again listed:

- Gender+ profile in the RPO and RFO institutions regarding research, education and funding: gender+ expertise and gender+ integration as profiled in policies, programs, practices, output and reportage;
- Ratio m/f participation in long-term and ad-hoc research, education and funding decision-making bodies, and in performing and assessment teams at various levels⁴;
- % of total budget allocated to gender+ expertise and gender+ integration regarding research, education and funding.
- Gender+ expertise and gender+ integration in profiles of researchers, teachers and evaluators, and their work;
- Levels of gender+ specific and gender+ integration in research, education contents and funding criteria and assessment.

For the reporting three annexes were provided.

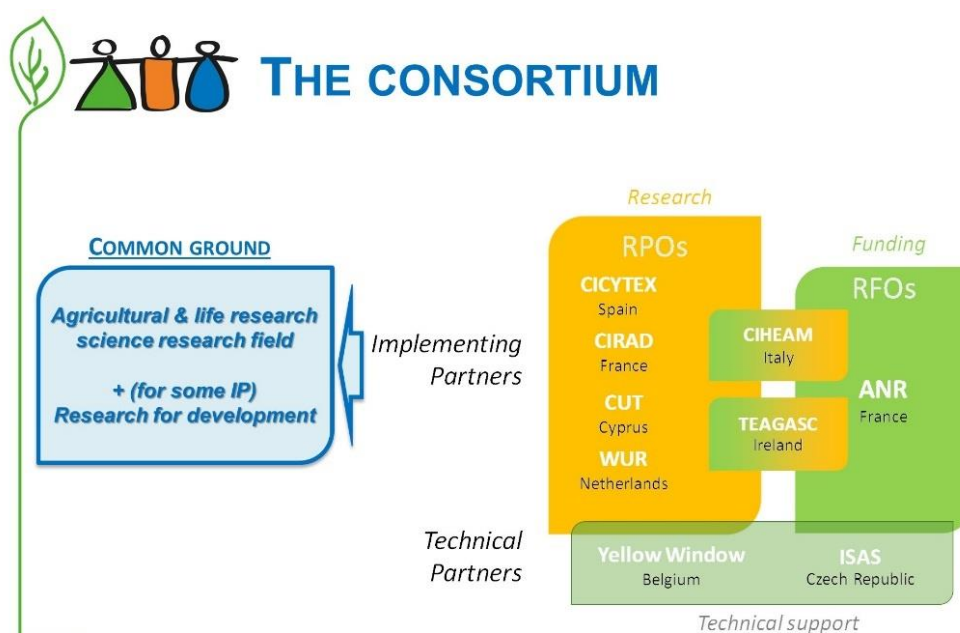
As follow-up this document of the WP task 6.2. presents a common rationale and framework to support the work in WP 6 to articulate and sustainably mainstream gender+ integration as a mark of

³ This is an internal document called Task 6.1. Audit of the Integration of Gender+ in Funding, Research and Teaching – Guidelines for analysis and reporting, compiled by M. van der Burg (WUR), May 2019.

⁴ This overlaps with the Gender SMART work packages 4 and 5 on HRM and governance policies to be considered as integral part of education, research and its funding responsibilities.

excellent, socially responsible research and innovation. It follows up on WP 6.1 reviews where these identified cases and practices to be further studied for lessons to learn to maximize supporting good practices and avoiding failures from design stages to funding, research and teaching practices. The same is to be applied for the design, implementation and evaluation of pilots in partner specific research, education and funding contexts. As stated in the Gender-SMART proposal it is meant to tailor further WP 6 activities with specific focus on innovation and development within the Food, Agricultural and Life Sciences. A selected sample of projects/programmes, and specifically of ex-ante impact assessments, evaluation and selection procedures will be in-depth investigated and used for assessing and adjusting the framework.

As in the reviews, the partners will be respected in making choices and adjustments relevant to their contexts. All partners, for instance, work around research programmes and projects, so aspects around gender+ expertise and integration in research contents can apply to all. Though, not all partners have funding opportunities and mechanisms to select research to be funded; several have some internal mechanisms, for instance to pre-select proposals. For the educational part, there are two university partners that cater to accredited qualifications from BSc/BA to PhD, but most partners have training or other education activities in their mandate and programs, and sometimes cooperate with academic institutions for accredited courses or thesis research. The partners can be divided as shown below in research performing organisations CICYTEX, CIRAD, CUT and WUR of which the two last ones are universities; then CIHEAM and TEAGASC as both research performing plus funding organisations, and at last ANR as research funding organisation.



1.3 Set-up

Basic aspects for Gender-SMART WP 6.2 were first presented in the Gender-SMART Kick-off meeting in March 2019 in Montpellier, partly integrated partly in the WP 6.1 guidelines and further discussed in Paris on 9 October 2019 adjacent to a Gender-SMART training in Paris.

From the reviews it became clear that there is a huge difference between partners and some have to start from scratch. Nevertheless, gender⁺ mainstreaming also implies transitioning to a diversity curriculum and research policies and practices. As acknowledged in the GARCIA project in 2015 it involves a concerted effort to address explicitly the missing content from research/teaching and to shed light on these topics and their omission (Trbovc and Hofman 2015).

The same is the case for the Gender-SMART partners. None of the institutions had incorporating gender⁺ into research or curriculum contents as an institutional strategy; whatever happened is the matter of individual initiative and enthusiasm and therefore not sustainably embedded. Together it was decided to provide a framework document that step-wise clarifies the field and options in relation to the field of Food, Agricultural and Life Sciences. Despite of being the first GEP implementing institutions in this specific fields, we could tap on more generic gender⁺-integration approaches and more specific ones, especially developed in development contexts.

This document therefore includes the following:

- A clarification of the difference between m/f disparities among researchers and gender⁺ integration in contents. The Gender-Sensitive Research Cycle, originally made in 2009 for the European Commission, is updated.
- Specifics for interrelated gender⁺ -integration in the various interconnected domains in the food, agricultural and life sciences, with in Annex 1 various illustrative examples with guiding questions
- The presentation and elaboration of transformative gender approaches as part of the Gender Change Continuum to the Continuum of Gender⁺ Integration, with examples and a checklist showing for the various approaches how to identify and score them (Annex 2 / 3)
- Final remarks and Trajectory, with trajectory towards sustainable institutionalisation in Annex 4
- References to underlying literature and documents with more guiding questions , checklists, tools and sources to work with.

2. Framework grounding: identification of gender+ aspects

2.1 Equal opportunities in research / Gender+ in research content

In the EU Gender research strategy a distinction is made between equal opportunities in research and in gender in research content as exemplified in a circular graph with two colours made in 2009 and re-used in 2014 (EC 2009, 2014)⁵. Below we include an adjusted graph to reflect gender+ opportunities and -integration in research, since nowadays we are used to address gender as intersecting with other social dimensions such as class, race/ethnicity (nationality), age, religion, sexuality, physical needs. We call these social dimensions instead of social categories since the visible physical or material characteristics of persons do not lead to social inequality per se but the values attributed and internalized to them justify social difference in being more or less privileged and being subject to conscious and often unconscious discrimination.

In the yellow circle, the yellow dots reflect the significance of promoting equal opportunities through establishing and securing mixed research teams, equal working conditions, equal team work culture and taking these all into assessment and monitoring procedures. The red circle with red dots addresses the gender+ aspects regarding the research content from the research idea phase to the dissemination phase.

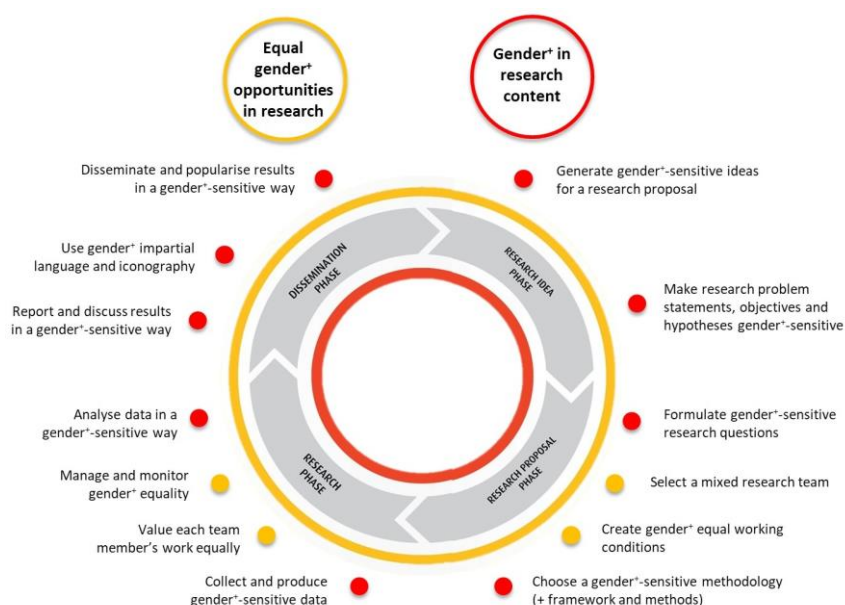


Fig. 1. The Gender-Sensitive Research Cycle, adapted from EC, 2009/ 2014, p. 2.1.

⁵ European Commission (2009)- [Toolkit - Gender in EU-funded research](#). EUR 23857 EN, Luxembourg: Office for Official Publications of the European Communities. See [more materials in training and toolkit modules](#) in English and Spanish, made by Yellow Window as part of the FP7 Capacities programme, concluded in 2012.

2.2 Gender+ in research teams

Background of researchers

The gender audits of the implementing institutions of Gender SMART showed that none of them had a common routine to collect and analyse data of researchers and research teams beyond appointments. There are no data to analyse, monitor or evaluate the composition of teams for research proposals, awarded projects or programs. Teagasc and ANR as fund providers though could analyse the research teams of the grants they awarded which showed specific gendered patterns as know from the literature (see D 6.1).

Since monitoring of any change can only be done in relation to available data, it is required that institutions identify where to start such combined effort as action.

Institutional gateways to financial acquisitions, such as Liaison or Tender departments at WUR, or internal selection processes, might provide those data. Tracking granted and otherwise announced new research descriptions might disclose these data as well, but producing such a dataset will be rather incomplete, is quite time-consuming and cannot be sustained for the future. PhD projects can often be followed rather systematically through their temporary research registration as part of graduate schools, or through graduation lists. Although PhD project are individual projects in themselves, the supervision team can be identified rather easily in combination with the PhD project. Another way is analysing disparities in output in articles and reports, but names of authors do often not disclose their sex, let alone other background characteristics than institutional association and perhaps scientific position.

Nevertheless, markers for other backgrounds than gender, such as scale, nationality, and scientific discipline(s), age group, type of contract are not easy to be associated from HRM data. Certainly, identifying by ethnic background is not considered as acceptable in many EU countries. The UK is one of the exceptions.

A to be further explored option is to cooperate with departments that support research acquisition such as the Liaison and Tender departments at WUR. These have regulation and various procedures for which research has to be checked and signed off. It is to be expected that there most of the externally submitted proposals and acquired research in name of the institution will be registered. If data on research teams from submitted and granted proposal can be made available, it would provide the data needed for analysis and monitoring.

Despite the lack of good data sets, a start can be made by all involved in research practice to consciously stimulate and promote building mixed teams and selecting the prime investigator when selecting the participants in research teams.

Qualifying gender+ in research team positions and team work

The data of the partners Teagasc and ANR for research funding also provide specific figures. These showed m/f disparity for the position of Prime Investigator (PI) and more disparity for more prestigious and higher budgeted research proposals, especially concerning international research. (see D 6.1).

Qualifying the research position in research can accordingly be done through identifying gender⁺ gaps in:

- Position in the project (e.g. prime investigator, work package leader, other functions)
- Type of project (e.g. scale; complexity in combinations of partners, countries, disciplines, stakeholders)
- Allocated package(s), task(s), work months, salary scales, scale of operation, and budget.

At last and not least, securing gender⁺ equality in working conditions and valuing each one's contributions to the work is fundamental during the research work.

2.3 Gender⁺ in research content

Research Infrastructure to include Funding and Education

Gender⁺ inclusion in research content is widely explained as improving the rigour of science and engineering. Besides capacity building of researchers to meet this up to its and their potential, an enabling environment is needed to support individual and team efforts. The recent publication of international experts in *Nature* clearly presents the argumentation that science and engineering infrastructure requires mutual support and strengthening in all three pillars to be distinguished: funding agencies (distributing research money), universities (research and education) and peer-reviewed journals (qualifying scientific performance). (Tannenbaum et al. 2019) The authors argue that universities need to step up to incorporate sex and gender analysis as a conceptual tool into science and engineering curricula and do more to prepare the scientific workforce for the future:

'Both funding agencies and journals may have policies in place, but researchers and evaluators by and large lack expertise in sex and gender analysis. The European Commission, which has had policies in place since 2014, found that fewer than expected funded research proposals incorporated sex and gender analysis and has correlated this low proportion to an 'absence of training on gender issues' (European Commission, 2017). (...) Numerous universities offer gender analysis in the humanities and social sciences, but not in core natural science and engineering courses' (Tannenbaum et al. 2019, pp. 143-144)

They mention several initiatives of capacity building to fill this gap which definitely requires more efforts by universities to strengthening and mainstreaming this in their education and research.

Gender⁺ in historical contexts of Food, Agricultural and Life Sciences

This common effort is certainly also needed within the field of Food, Agricultural and Life Sciences. (CGIAR 2011 and 2012, K.E. Colverson interview 2014, PennState News 2018, van der Burg 2019). In Europe and most western countries, the field used to be rather divided in research and education for so-called development contexts of middle and low income countries (MLIC) and western contexts. Currently, more and more interchange in-between is effectuated; highlighted is that the global context is crucial for all parts of the world.

As many other fields this research area also knows a rich history of critical studies on women and gender that really started off in the 1980s but experienced a push back in the 2000s, parallel to

other fields in academia and outside. (Bock and Shortall 2017, Guétat-Bernard 2014, van der Burg 2019). There are quite some toolkits, checklist and research case studies, especially for a development context from the early periods that still are usable for an update (see Quisumbing et al. 2014, van der Burg 2019). Recent intensification of gender research and capacity building has been especially led to new volumes such as Shortall and Bock (2017), and project publications and guidelines by international agencies such as FAO and international agricultural research institutes within their cooperation as consortium CGIAR⁶. The last few years they also took up to integrate gender⁺ as to be explained as intersectionality into their research. CGIAR gender strategy and research is at the moment leading in the field with the great support of also a CGIAR Platform on Gender Research to coordinate and support the work among the various research centres and in cooperation with many external institutional and consultant researchers and their initiatives.

The overall history within the field of Food, Agricultural and Life Sciences reflects a range from women-only approaches to gender approaches, and lately gender⁺ approaches which partly overlapped and partly integrated new aspects over time. Van der Burg (2019) suggests to not see them as linear progressive development but as a changing spectrum of approaches that can be evaluated and adapted for specific purposes.

⁶ See references (e.g. Quisumbing et al. 2014, Sachs 2019, WB et al. 2009, 2012 and 2015, CARE 2018, FAO publications) and links at website CGIAR Collaborative Platform for Gender Research; <https://gender.cgiar.org/>, and Agri-Gender. Journal of Gender, Agriculture and Food Security.

3. Gender+ in Food, Agricultural and Life Sciences Contents

3.1 'Science for impact' at the crossroads of life and social sciences

In line with the focus of the Gender-SMART project on Food, Agricultural and Life Sciences, we can characterize these sciences as essentially applied research. This comes back in mission statements of institutions in this field in which these often frame their work as 'science for impact'. These highlight their aim to contribute to global challenges, often aligned to the support of a more food and nutrition secure and climate resilience world, while working on achieving the Sustainable Development Goals. Social and life sciences are both acknowledged as significant to contribute to the research domains of the Food, Agricultural and Life Sciences based on the common ground that they at least partly deal with a human world that is worthwhile to secure for future generations. However, bringing both social and life sciences approaches together into such a wide ranging field around food and agriculture, is not just done by bringing persons of diverse expertise background together. An understanding of the interconnectedness of the various research dimensions of the field is required.

3.2 Interrelated dimensions in food, agricultural and life sciences

Due to the complexity of this field that can be located on the crossroads of life and social sciences, we will first illustrate which fields are commonly acknowledged and distinguished:

- Research from genetics to biotechnology of plants and livestock:
aiming at maximizing production e.g. through variety, species and food product control; growth conditions and food processing control; disease protection, product health, and food safety control, etc., to maximization of potential yield (produce/meat) and product
- Research on external biophysics aspects or technologies related to plant, livestock and food production processes:
aiming at balanced control to maximise production on the long run
 - Climate variety and climate shocks (→ climate mitigation)
 - Natural resources (→ natural resource management)
 - Technologies (→ AI, ICT, equipment, machines, chemicals, working methods)
- Research on internal agri-food system functioning:
(e.g. crop systems, farm systems, value chains, livelihood systems etc)
aiming at optimizing internal systemic functioning, if humans included more as production means:
 - Farm system approaches focusing on balancing and optimizing interplay of crops, livestock, natural resources, climate.
 - Value Chain approaches (from field to fork: sustainable economic efficiency)
 - Rural economic development (price control, infrastructure, labour force shocks, alternative livelihoods)

- Research integrating humans in agri-food systems:
(e.g. Agri-Food System Context including integratively economic, social, cultural, political aspects and human agency based on critical reflection of temporal and cultural contexts)
 - Farm system approaches including interconnected scales and structures, humans as actors in farm systems and NRM.
 - Added Value Chain approaches (human entrepreneurial approach from economic to social / cultural change and innovation opportunities)
 - Rural economic development (humans reactive and pro-active acting resulting in shocks in labour force, outmigration, multi-faceted livelihoods)
 - Sustainable development approaches combining ecology, economy and social justice
 - Food and Nutrition Security (Food rights and sovereignty)
 - Circular Economy and Waste reduction
 - Field specific value systems from legal to customary laws (property and inheritance, marriage, honourability, food safety, environmental regulation) to norms

The below graph illustrates how gender research considers these often distinguished dimensions as interconnected as a requirement for gender integration from a systemic and holistic societal research perspective:

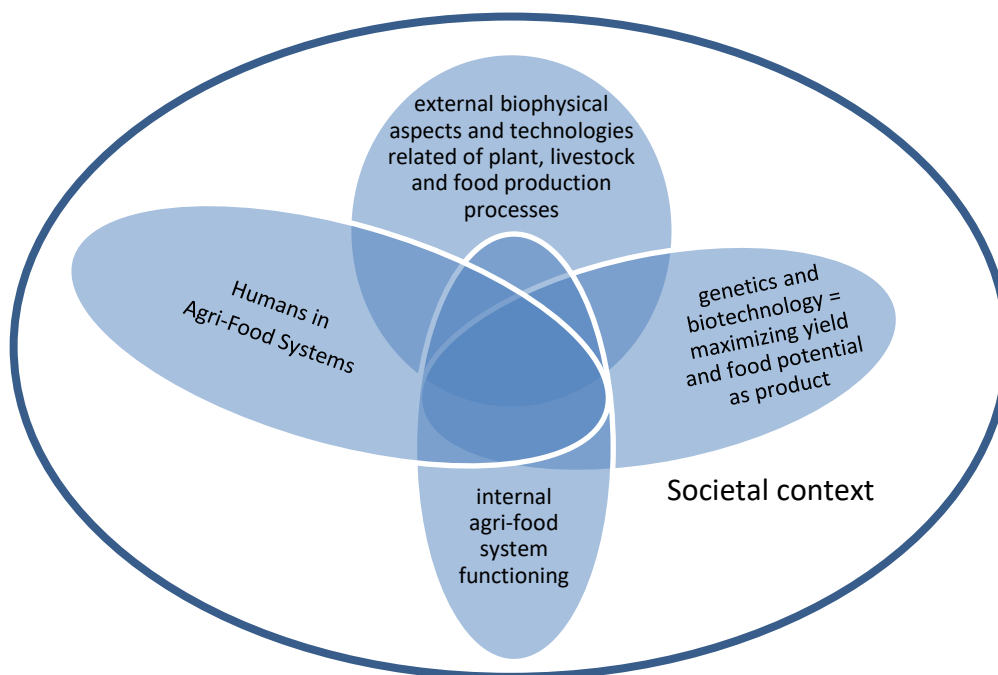


Fig. 2. Interconnectedness of research dimensions as basic principle for gender integration in food, agricultural and life sciences (M. van der Burg)

These research fields are interrelated in many ways and consequently changes or innovations in any field will also influence aspects in others. These can possibly offer new opportunities but also constraints for various stakeholders and peoples involved, mostly in gender+ differentiated ways. Whether developing a new variety, irrigation system, ecologically sound quota for livestock or

training in ICT options, in the end humans are affected in various ways. They rather to be included to have a voice in designing, defining and selecting what research to develop and this way influence the outcome from a wider perspective and as part of a longer chain of argumentation and interest but also enable to better tune to specific contexts. Since this breaks with 'one size for all' solutions, new methods have been developed to acknowledge and include the variety of (human) influences in research by defining context and identifying system and chain relations and distinguish the potential relevant social dimensions as gender and others at play.

The society context is even wider than the direct context for agri-food systems. Here we have aspects we can, for instance, derive from the Sustainable Development Goals that include wider groups of people and natural resources than who is directly involved in agri-food systems. These also address, for instance, reproductive health issues and political representation that are not considered as specific agri-food systems issues. Nevertheless, these can influence the people and resources in agri-food systems, and agri-food systems do influence society in other ways than by their direct functioning. For instance, priorities in policy settings from taxation, social security to environmental regulation can be disadvantageous for farming families and need to be investigated for their impacts. But also production processes can be harmful for society on the long-term from food safety under use of pesticides to ecological foot prints due to worldwide specialisation and therefore long distance transports. This is why social embeddedness of food, agricultural and life sciences is significant for gender+ integration.

3.3 Illustrations of gender+ integration in research in Annex 1

Illustrations of gender integration can be found in the annex 1. Not all the illustrations address gender+ or intersectionality explicitly, but can be added in future research by expanding:

- Gender-responsive breeding
- Gender integration in Climate smart agriculture (CSA)
- Gender in Agricultural Mechanisation
- Gender integration in farming systems research

From the many examples we derived some main core questions that are elaborated more sophisticatedly in the following of the document:

Core questions:
<ul style="list-style-type: none"> • Examine: how gender might be of importance for all stages in the research process?
<ul style="list-style-type: none"> • Which social aspects are at play that can be differentiated according to gender and other social dimensions? (e.g. phenomena, product, labour, practice, use of technology, knowledge, other resources, budget, expectations, power, norms)?
<ul style="list-style-type: none"> • Who are actually addressed, involved and affected? How might they be differently impacted in the reduction of reducing inequalities(e.g. stakeholders, end-users, consumers? With which positions, knowledge or access to resources, interest? Who will be hold accountable, who gets what benefits, control, budgets, facilities?
<ul style="list-style-type: none"> • How can gender be integrated and operationalised in the data collection, methods, tools ?
<ul style="list-style-type: none"> • How are outcomes presented and discussed? For whom, with whom, place etc?

4. From gender-blind to gender-transformative approaches

4.1 Transformative approaches and the gender change continuum

Kantor (2013) and Kantor et al. (2015) started to apply transformative approaches for gender+ integration in agricultural research for development (AR4D) to both the formulation of objectives and outcomes as to the design of the research process and practice as illustrated below.

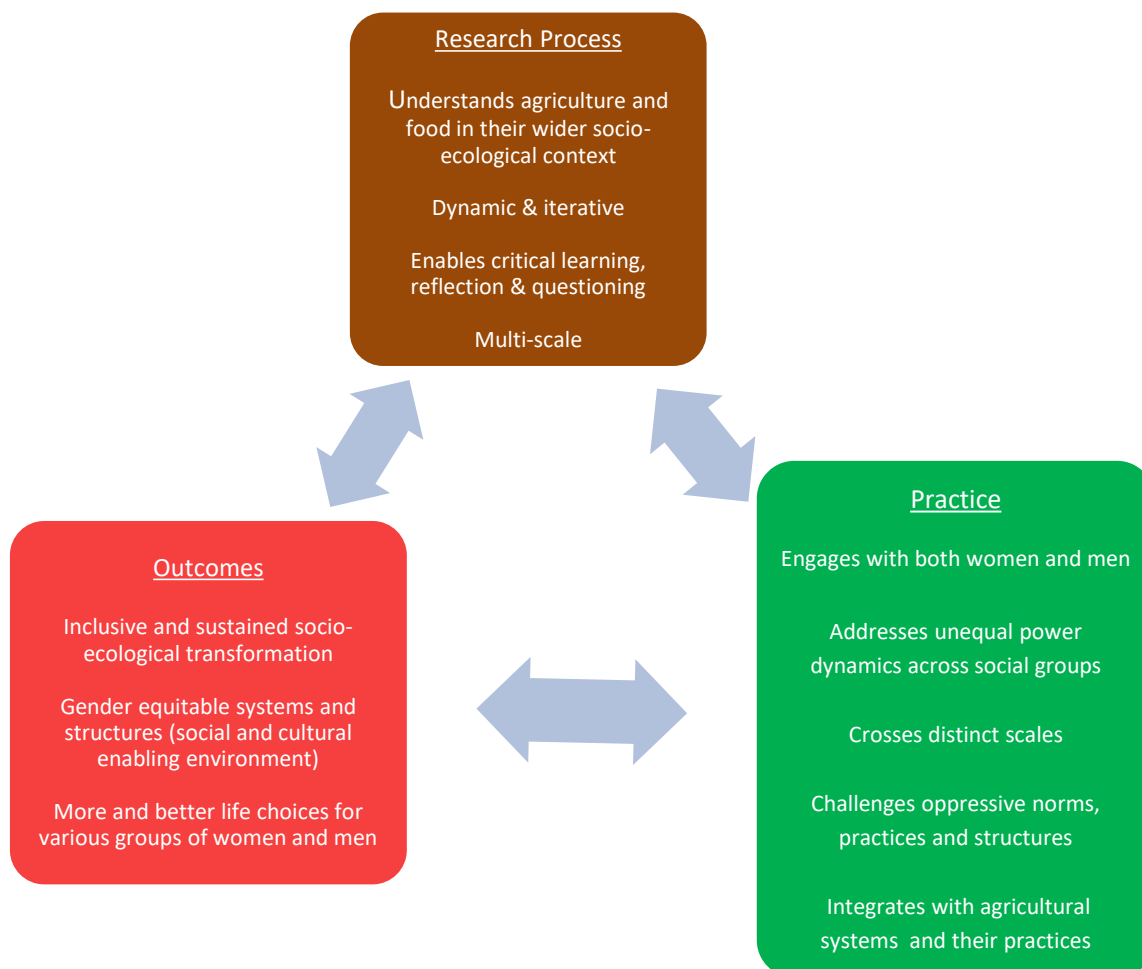


Fig. 3. Gender transformative approach to AR4D. Source: Kantor 2013, p 4.

They were inspired by the gender integration continuum and introduced it to apply in AR4D. In Aregu et al. (2019), we explained the origin of the model that was taken over from health research. It was introduced by the US Interagency Gender Working Group (IGWG) to guide projects to qualify and assess their research approaches to gender integration (IGWG 2017). As differentiation between two extreme approaches were made at the top: gender-blind and gender-aware approaches. The text explained that gender-blind research essentially ignores gender aspects while a gender-aware does; it examines and addresses.

The original graph distinguished three stages as a trend of progression from possibly being aggravating gender inequalities and being exploitative up to accommodating and gender transformative in effect, gradually leading towards more gender equality (gender change). In the original model it was rather implied that accommodating gender approaches lead to gender accommodative change, and gender transformative approaches to gender transformative change.

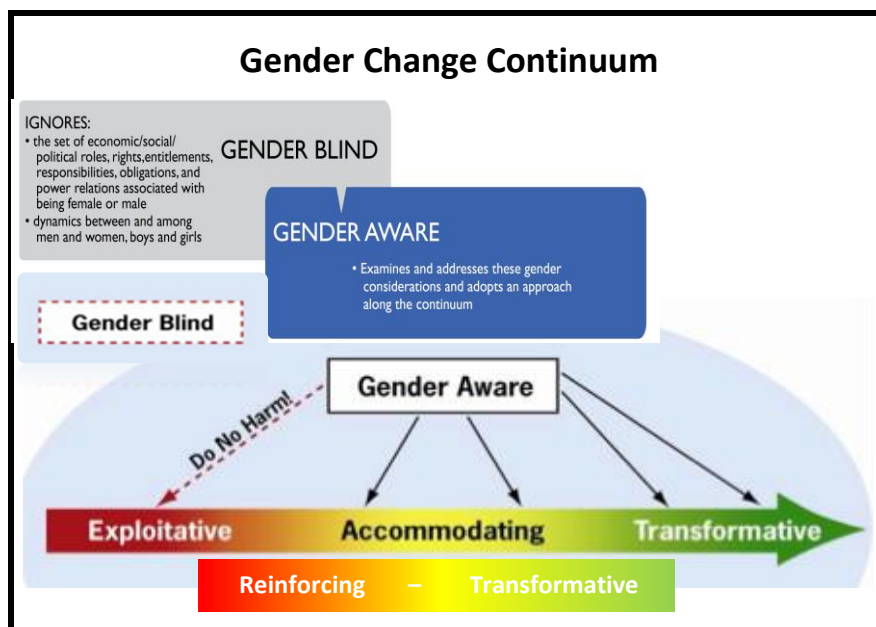


Fig. 4. Gender Change Continuum. Source: Aregu et al. (2019), p. 164, adapted from IWGW (2017).

Nevertheless, in Aregu et al. (2019) we argued that it is likely that there is no direct link between approach and outcome. Accommodating approaches can partly fuel transformative change but also aggravate inequalities, for instance when considering that men might gain more control or power because of a better starting position if both groups are considered. To emphasize the difference between approach and outcome or change, we suggested to split the model. (Aregu et al. 2019). In our adapted versions (Aregu et al. 2019, p. 164; van der Burg 2019, p. 48) we highlighted the need to also identify the possible overlap. We adapted the original graphic by explicitly distinguishing and connecting various innovation approaches and inserting how gender approaches of increasing gender sensitivity can be related to stages in the gender change continuum. This way, that version provides more clarity and nuance to qualify gender-blind and -aware approaches in relation to their outcomes and impacts. After historically having used the model, van der Burg (2019) highlighted to not see these stages as a linear progress in approaches but as a spectrum that temporally can overlap and keep on being used.

Fisher et al. (2019) distinguish these approaches as follows:

- Exploitative approaches are based on gender stereotypes and therefore reinforce inequalities. An example would be an research that extends invitations to women only for field that researchers and extension officers identify as women's responsibilities and supposedly "superior capacity" in this area. At the same time, mechanized technologies are predominantly developed for men, who are seen as having "higher technical abilities".

- Accommodating approaches do not question inequitable gender norms but work around them. Taking the example of a community in which labour-intensive post-harvest activities are assigned to women, research with an accommodating approach would look into ways to reduce women's drudgery, while at the same time not challenging the culturally constructed gender roles.
- Transformative approaches seek to establish equitable gender relations. Part of this is to build awareness of the fact that gender norms are not "natural" or "given" but human-made and thus transformable. An example would be a research that includes spouses and other female and male household members, as well as community leaders, in nutrition activities, thereby looking into the shared responsibility of different actors in this area. Invitations for sessions are provided to both men and women, if possible in gender-separate groups. This allows participants to bring up their gender-specific questions and needs. (based on Fischer et al. 2019, p. 6)

4.2 Transformative gender approaches

Most interesting for advanced gender research is the transformative approach. Nevertheless, when combined with development initiatives in the field, such an approach can easily encounter resistance since it aims at structural systemic change. From a scientific point of view, it is anyway worthwhile to further investigate and exchange what transformative approaches would entail and what is required to interpret gender dynamics within wider system contexts and to find options for gender transformative recommendations. Examples of such explorations are to be found in many reports and articles related to gender expert research of CGIAR institutes in cooperation with scholars. (e.g. Hillenbrand et al. 2015, van Eerdewijk et al. 2017, Lawless et al. 2017, Sachs 2019)

Hillenbrand et al. (2015) provides an insightful overview. They first point at two axes at play dividing individual and systemic, and informal and formal. It helps to identify various level of locating opportunities and constraints or barriers if when occurring specific inequalities.

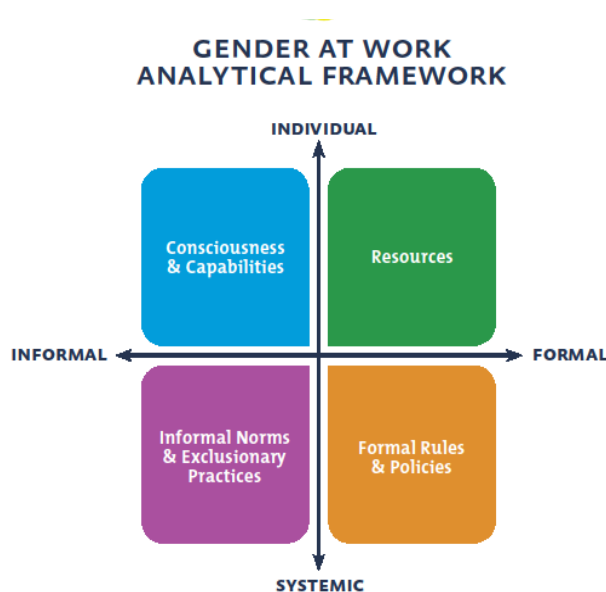


Fig.5. Analytical Gender Framework Source: Slides IFPRI Gender Breakfast with CARE and WorldFish (2017)

Hillenbrand et al. (2015) argue that transformative change requires to examining three broad domains of empowerment while revert the framing of the discourse on empowerment from a focus on women's individual agency to collective responsibility and political engagement and action. To their support, they actually quote the US Interagency Gender Working Group (IGWG):

“Gender-transformative approaches actively strive to examine, question, and change rigid gender norms and imbalance of power. Gender-transformative approaches encourage critical awareness among men and women of gender roles and norms; promote the position of women; challenge the distribution of resources and allocation of duties between men and women; and/or address the power relationships between women and others in the community” (Rottach et al. 2009, p. 8, as quoted in Hillenbrand et al. 2015).
These approaches aim to go beyond individual self-improvement among women toward transforming power dynamics and structures that act to reinforce gendered inequalities. (Hillenbrand et al. 2015, p. 10)

These three dimensions of empowerment are:

- agency: individual or collective capacities (knowledge and skills), attitudes, critical reflection, assets, actions, and access to services;
- relational (intrahousehold and beyond): the expectations and cooperative or negotiation dynamics embedded within relationships between people in the home, market, community, and groups and organizations;
- structural: informal and formal institutional rules and practices (environment, norms, recognition and status).

Based on this notion CARE built a Gender Equality Framework as shown below:

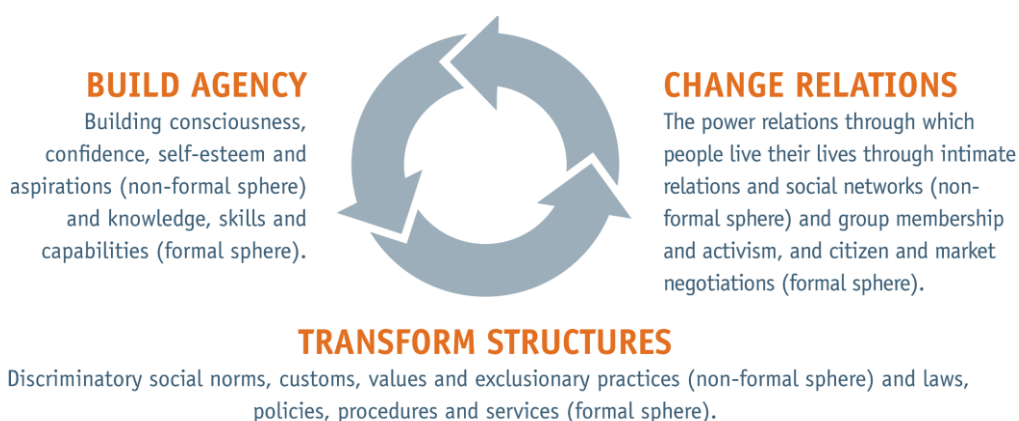


Fig. 6. CARE's Gender Equality Framework. Source: CARE 2018, p. 7.

Hillenbrand et al. (2015) state that these three domains offer a broad framework for understanding where transformation is needed to advance gender equality. They are deeply interconnected. Individuals' aspirations and attitudes are presented as largely influenced by the social norms and practices within their societies, as well as the quality of their relationships and support networks. The authors also state that evidence has shown that programming focused on one domain risks

reversibility and harm if it fails to engage the other domains for gender-transformative change, while referring to others as well. This framework implies to not only look at individual agency, relations or structures as stand-alone phenomena but to research or position partial research within the interconnected influences of agency, relations and structures.

As Hillenbrand et al. (2015) indicate that gender-transformative change and processes of empowerment are ultimately about transforming unequal power relations and the structures and norms (both visible and invisible) that uphold them, gender-transformative approaches imply a conceptualization of empowerment based on feminist roots. They connect this notion to the multiple manifestations of power and how they interact to create unequal outcomes. Although introduced in the 1990s these only later found greater attention. Nowadays four dimensions of power are commonly acknowledged in relation to empowerment:

- **Power over**—defined as control over people, resources and others’ lives—is the most commonly addressed form of power.
- **Power to** act and to realize one’s aspirations is directly related to the agency dimension of empowerment and is frequently measured in terms of individual skills, capacities and self-confidence.
- **Power within** refers to a person’s or group’s sense of self-worth, self-awareness, self-knowledge and aspirations, which are also related to agency and shaped by social norms and gendered institutions.
- **Power with** involves collaborative and collective power with others through mutual support, collaboration, recognition and respect for differences. This can take place at multiple levels, from household and intimate relationships to cooperatives and collectives, as well as broader-level coalitions and movements for change. (Hillenbrand et al. 2015, p. 5)

The below graph illustrates this very well:

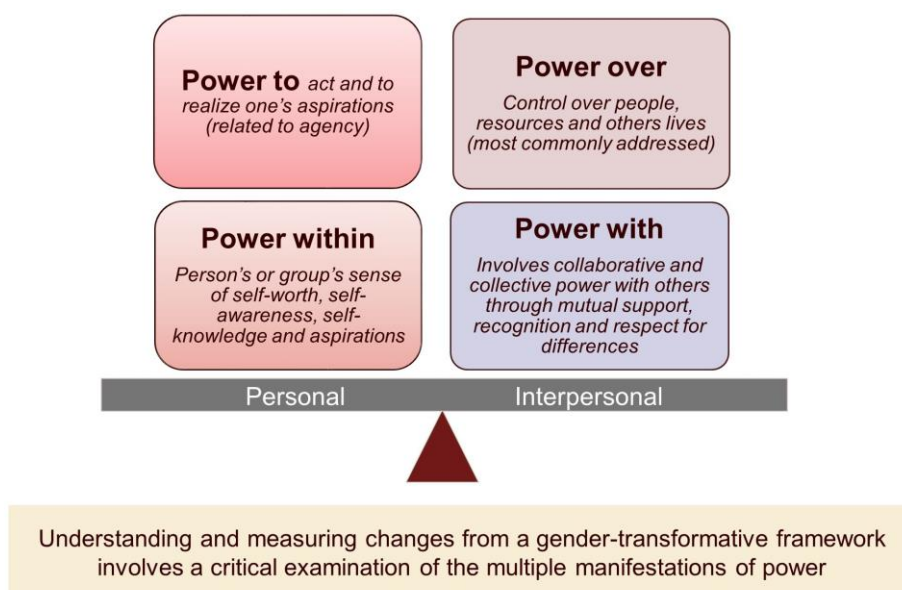


Fig. 7. Multiple dimension of Power. Source: Slides IFPRI Gender Breakfast with CARE and WorldFish (2017)

A fifth dimension of power has been recently introduced by Galiè and Farnworth (2019). With defining ‘power through’ they tried to capture another dimension beyond the enactment of ‘agency’ of an individual or a ‘property’ to have. They argue that ‘power with’ refers to co-creation processes beyond individual action but it only extends the same characterization of power to collaboration. With ‘power through’ the authors aim to define an aspect of empowerment that is relational and non-agentic or intentional. Such an empowerment in turn affects an individual's ability to enact her or his individual potential for empowerment. As dimensions of ‘power through’ the authors identified individual (dis)empowerment being mediated through the association with significant others, through compatibility with locally sanctioned gender roles, and through the attribution of an ‘empowered’ or ‘disempowered’ status as acknowledged by community members.

The above reports and many others include question lists for various significant domains in AR4D. These are all developed in the context of development in lower and middle income countries, but the principles can be translated and used in the European context (e.g. EIGE 2016).

One can find important distinctions, indicators and check lists to be used when developing or assessing a research proposal (e.g. Hillenbrand et al. 2015, Lawless et al. 2017, Fischer et al. 2019, World Bank 2012, Jost et al. 2014, FAO 2011, 2012, 2016, 2018, FAO and Care 2019). Insightful examples to guide gender-accommodating and gender-transformative objectives in specific significant research areas can be found in Lawless et al. (2017). Added in ANNEX 2 are case stories and the OXFAM description and checklist for the various approaches (Parvez Butt et al. 2019). These were based on the original IWGW model. At last, a guide with questions to include intersectionality we adjusted from Kaijser and Kronsell (2014):

Lead questions to include intersectionality

- Which social categories, if any, are represented in the literature and its empirical material?
- Which social categories are absent and should be included?

- Are there any observable explicit or implicit assumptions about social categories and about relations between social categories?
- What identities are promoted and considered? Are any other aspects of identity neglected or deemed insignificant, and should be included?

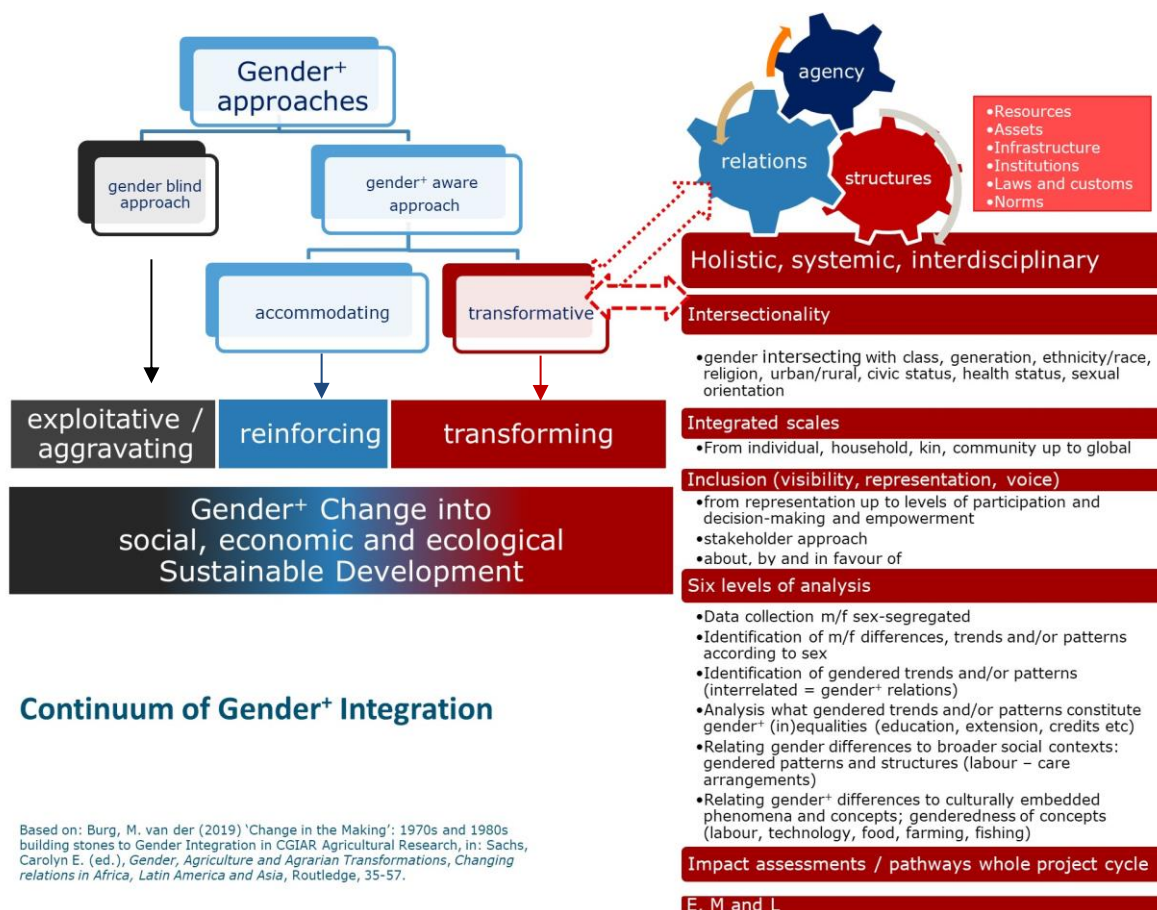
- How are relations between humans and between humans and the environment portrayed?
- How are natural resources and nature represented?
- What types of knowledge are recognised and privileged? What should be included?

- Are any norms for behaviour discernible?
- Are there norms about the relation to other humans, resources, and nature?
- What are the norms that set the standards for a ‘good life’?
- How are these norms reproduced, reinforced, or challenged?
- How are they reflected in institutional practices? What should be additionally included?

Based on Kaijser and Kronsell (2014, pp. 429-430).

4.3 Combination in levels of Gender+ integration

Van der Burg (2019) made a graph that interconnects the various aspects to further ensure the elaboration of transformative research. It is based on recent overviews of gender approaches and former explications of crucial aspects (e.g. Currie and Vernooy 2010, Quisumbing et al. 2014, Hillenbrand et al. 2015, IGWG 2017, van Eerdewijk et al. 2017, Petesch et al. 2018). Braithwaite (2001, p. 5) suggested the six levels of analysis and Cho et al. (2013) address intersectionality:



Continuum of Gender+ Integration

Based on: Burg, M. van der (2019) 'Change in the Making': 1970s and 1980s building stones to Gender Integration in CGIAR Agricultural Research, in: Sachs, Carolyn E. (ed.), *Gender, Agriculture and Agrarian Transformations, Changing relations in Africa, Latin America and Asia*, Routledge, 35-57.

Fig. 8. Continuum of Gender+ Integration. Source: van der Burg 2019, p. 48.

Danielsen et al. (2019) further discuss and present the complications to capture various approaches. To assess a program of the Canadian International Food Security Research Fund (CIFSRF) over a longer period of time, they used a clustering approach to come to relevant categorizations that allow to include change in approaches. Their listing is an inspiring example for how scoring of gender+ integration can be operationalized.

At last, which methods are working well in relation to the various approaches are extensively discussed in the examples provided as well. From surveys to interviews and focus group discussions are discussed, tools to use added and exemplified for participatory plant breeding, participatory variety selection up to action research and technology introduction together with sessions on gender dynamics. The references and websites together with the annexes provide inspiration to use for both research in global contexts as especially within the European context. A score table for assessing the level of gender+ integration is added as Annex 3.

5. Final remarks and trajectory steps:

The Gender-SMART project will develop pilots for the integration of gender⁺ in research, education and funding. Communities of practice will be challenged to build good examples on the various levels and approaches of integration. As a minimum requirement for monitoring, it is decisive to keep inventory of research, curricula and proposals submitted and executed by men or women in various positions, tasks and budgets, but also content-wise.

Quite interesting is to consider what the GARCIA project has formulated. Trbovc and Hofman (2015) suggest to set up inventories of gender related projects and courses carried out at the institution, which would be annually updated. Existing offices at the institutions were considered entry points to extend the already existing administrative practices of collecting data within the institution. Also the annual performance report was advised to report on gender-related research/ teaching.

It is advised to build community of practices in a safe and respectful working environment to create a feeling of belonging. Such an engagement with peers will facilitate that participants more readily share their work, their constraints and eagerness to learn. This participatory way of further professionalisation in integrating and developing expertise in this area matches the principles of the Gender-SMART project. To better understand and qualify the differences in integration the presented check lists and score table can be used. An optional trajectory towards sustainable gender⁺ integration is added as ANNEX 4.

Among the partners this process will be stimulated by together joining webinars organized by others, especially our sister projects, but also by organising ones by themselves. More detailed planning for specific activities of the Gender SMART project will be done in the first months of 2020.

An open call conference in Wageningen, the Netherlands, in May or June 2021 is planned to further promote exchange and professionalisation for this specific field. Keynotes, panel discussions, paper presentations and possibly other forms by open call and invitation will be paired with film and documentary program and open space for spontaneous meetings. One day before and after the core activities, organisations in the field can organise and offer other activities to their members or broader audiences upon request and agreement. A workshop for the Gender SMART partners alongside will further stimulate and train their communities of practices meanwhile built.

More detailed elaboration and planning to specify this framework for the integration of gender⁺ aspects in education and funding is foreseen in the Gender-SMART project calendar. From the institutional gender analysis of D 6.1, we learnt that gender⁺ integration in education requires more than the curriculum contents. The research content framework can certainly be used, but especially at WUR there is also demand for elaborating on gender⁺ sensitive didactics and curriculum modules that also prepare students to recognise and take action upon gender aspects in their lives and future workplaces. Similar complexities are to be expected in the elaboration of gender⁺ integration in a funding context. There the call, assessments and evaluations of proposals require concerted effort of the funding agency and the various researchers plus experts involved. Workshops or training about gender⁺ integration for applicants and assessors can be derived from research contents but list of criteria to be assessed is slightly different. The frameworks offered in this document will certainly provide support for the field of food, agricultural and life sciences.

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ANNEX 1. Illustrations for gender+ integration

A 1.1 Gender-responsive breeding

Recommended source:

Tufan, H.A., S. Grando and C. Meola (eds) (2018). State of the Knowledge for Gender in Breeding: Case Studies for Practitioners. Lima (Peru). CGIAR Gender and Breeding Initiative. Working Paper. No. 3.

<https://cgspace.cgiar.org/handle/10568/92819>.

The working paper on gender and breeding (Tufan et al. 2018) is a case studies synthesis reflection of the CGIAR initiative for a CGIAR Gender and Breeding Initiative (GBI) that was launched in 2017. The GBI focusses on integrating gender+ in the plant and animal breeding practices by connecting the lab and field activities with the perspectives of end-users both as growers and ultimately the consumers. The study states that many CGIAR breeding programs know that if they overlook traits that are important to women users, this can aggravate not only their food insecurity and poverty but also their household's. (Tufan et al. 2018) From the past it is known that larger farm holdings profited more from new varieties than smaller farms. The latter were not able to profit or even could not meet the new competition and had to give up farming in their own right. Examples tell that new varieties were often different in length or taste and texture. Although these had better yield potential, these were often less useful than the old ones for women farmers. For instance, a shorter but more stable stem meant for women farmers to have less straw to use. Or they could no longer prepare food the same way when kernels lost cooking characteristics needed for their specific ways of preparing food. A more recent example is the breeding of bigger size of fish for efficiency reasons while small scale women traders and poor women consumers are favouring smaller fish to regulate their rather informal trade-consumption chain that was balanced to small portions of income/expenses and household nutrition security of both women groups.

The generic observation is that breeders are used to select innovative trials without extensively considering social criteria or do any social needs or impact assessment. Although food processing in the end phase uses testing panels with potential consumers, this has become a new practice in breeding such as participatory plant breeding (PPB) that includes participatory variety selection (PVS) from growers to consumers. Here various groups of women and men can be included. However, the GBI group identified that breeding programs lack enough practical methods and tools that can support how to be more gender responsive and consider gender differences in breeding schemes. The authors argue that plant and animal breeders need to consider assessment results about the needs, priorities and effects for potential groups of men and women users, before genetically determining traits, such as taste, colour, size, and shape. The GBI therefore started to building on a gender in breeding strategy with an interdisciplinary group of breeders and social scientists. (Tufan et al. 2018)

In their foreword of the case studies synthesis, two leading persons of this GBI reflect on the effort from both sides to cooperate motivated both by adding value for most people without doing harm to specific groups. They express it is one of the greatest challenges for gender scientists working in the aqua/agricultural and natural resource domains to make gender analysis meaningful for biophysical scientists. They emphasize the importance to understand different jargon and different categorizations of knowledge. They perceived the cooperation as a dialogue to together break new ground. Their reportage of various case studies illustrates these different ways of navigating the gender-breeding interface and details how gender analysis is relevant for breeding. To include gender+ aspects, the added one stage to the main stages of a breeding program: a social targeting and demand analysis to inform breeding criteria as shown in the figure below (Tufan et al. 2018).

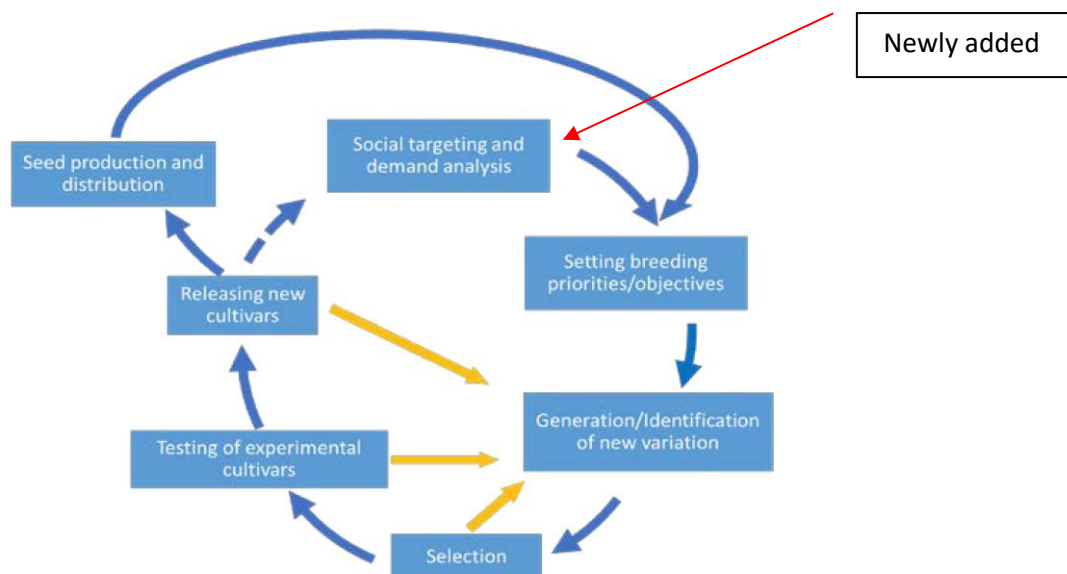


Fig. 9. Modified version of the main stages of a breeding program. Source: Tufan et al. 2018, p. 9.

Tufan et al. (2018) present four principles in which gender should be taken into account as showed below. Some small adjustments were made to include consumers as well:

Questions to raise to make a breeding program more gender-responsive?

1. When, where, and why women and men are important and often distinct groups. Take into account important which differences in constraints were faced by women and men as farmers and/or consumers that breeding can influence.
2. How may design decisions (e.g., defining plant ideotype, prioritizing of traits, targeting and testing varieties with farmers) impact and be influenced by gender dynamics in communities and households, affecting for example, women's labour, available resources and opportunities.
3. What to bring into the breeding design to specifically enabling benefits for women farmers and/or other groups of women when they are an important group who require a special approach, how can their needs, constraints and knowledge more generally be included.
4. How to make sure to measure the success of the breeding program in ways that include positive impacts for women, men, as well as for households of consumers or farmers in general.

Adjusted into questions from source: Tufan et al. 2018, p. 7.

The interesting case studies done were also presented in the book (Tufan et al. 2018). The last chapter by Ashby (2018) identifies what kind of gender aspects were at stake in each step of the entire breeding process circle after having critically examined the case studies.

In the box below these are copied for eight distinct breeding phases as elaborated by Ashby (e.g. Tufan et al. 2018):

Seven Critical Decisions for Gender Responsive Breeding with Development Goals

1. Who are the potential customers for breeding?

Assessing the relevance of gender differences for defining “market segments” or groups of customers for actual or future breeding products.

2. What end-users producers and/or customers to target? What is the justification for targeting one segment of the user population versus another, considering differences in demand among men and women?

Assessing whether gender differences among customer groups are representative of the target population for the breeding program.

3. Which trait preferences could the program potentially breed for? Which existing or new-bred plant or animal traits could potentially satisfy some aspects of identified demand?

Analysing demand in decision on understanding gendered trait preferences of customer groups or market segments to understand what breeding can potentially do and for whom?

4. What is the product profile or package of traits that best meets the needs of a given target group of customers? What product can feasibly be developed to meet the priority demand of the most important customer group?

Identifying one or more priority products (or packages of traits) that meet breeders’ specifications for feasibility and supply an important customer group, taking different trait preferences of men and women into account. Narrowing down the options from decision to a “breedable” product.

5. How is the program going to breed for the traits needed to reach the product profile that best meets the needs, taking gender into account? Is new variation needed to meet the specifications of the product profile and how will genotypes be selected?

Using the profile of a desired product from decision to determine the specific, technical breeding objectives and methodologies needed for that product to meet the identified gender-responsive demand and breeding feasibility constraints, with a focus on evaluating whether and how new sources of variation need to be introduced.

6. How will selection of genotypes meet the specifications of the gender-responsive product profile?

Using the profile alike but now with a focus on testing that includes gender-relevant criteria to select and advance genotypes to final release of crop varieties or animal breeds.

7. What constraints to address in the design of delivery systems for the breeding products?

Managing the product launch and dissemination and its interface with delivery systems so that crucial gender-related constraints and opportunities are addressed.

Source: Ashby in Tufan et al. 2018, pp. 135-136, as based on GBI (2018) Critical Decisions for Ensuring Plant or Animal Breeding is Gender-Responsive Brief No.1..

The below graph is the result of the decision checklist per breeding phase (orange diamond shape) what question is gender-relevant to respond in decisions to make (yellow squares) and how the outcome can reflect gender-responsiveness (green rounds).

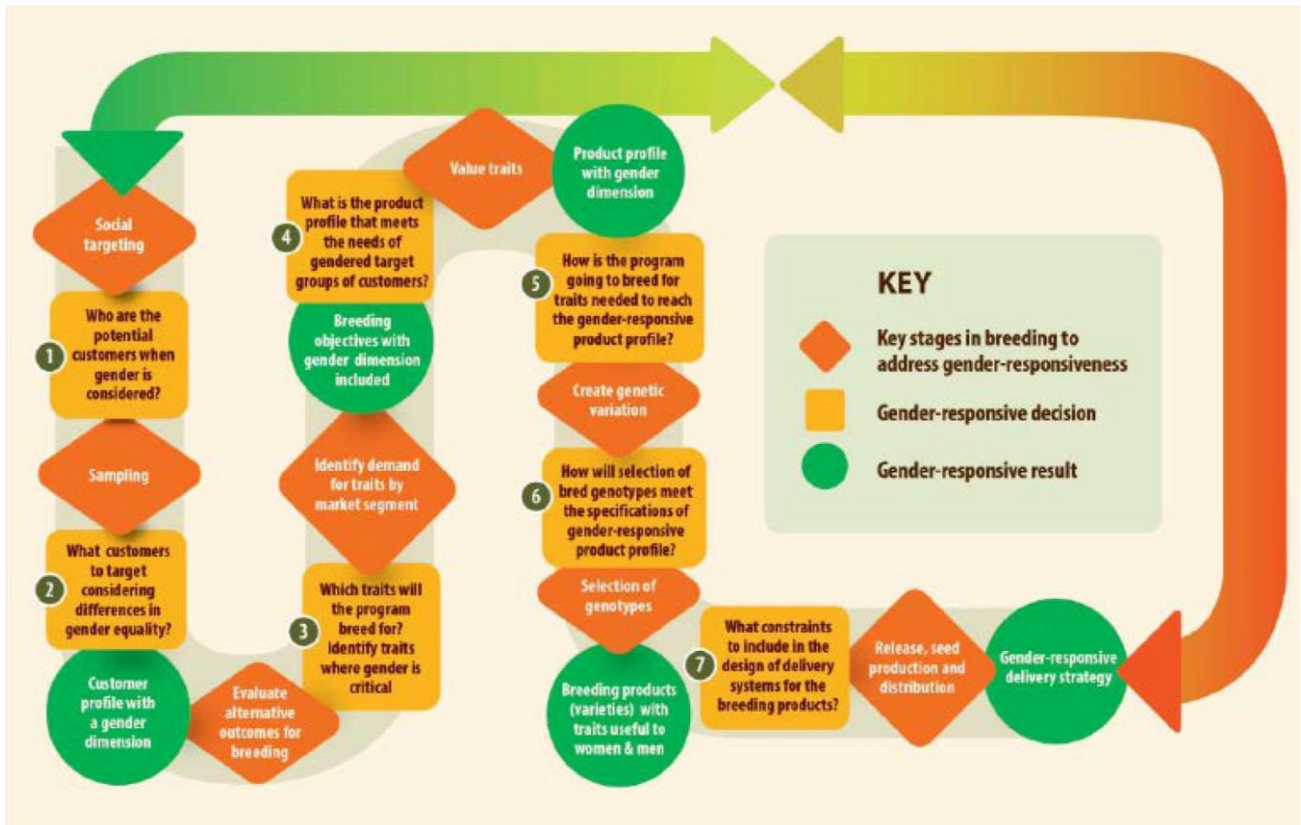


Fig 10. Decision checklist by Ashby in Tufan et al. (2018, p. 135)

A 1.2 Gender integration in Climate smart agriculture (CSA)

Recommended sources:

FAO and CARE (2019). Good Practices for Integrating Gender Equality and Women's Empowerment in Climate-Smart Agriculture Programmes. Atlanta. 108pp. Available at: <http://www.fao.org/3/ca3883en/ca3883en.pdf>

World Bank Group, FAO and IFAD (2015). Gender in Climate-Smart Agriculture. Module 18 for the Gender in Agriculture Sourcebook. Agriculture global practice. Washington, D.C. : World Bank Group.
<http://documents.worldbank.org/curated/en/654451468190785156/Gender-in-climate-smart-agriculture-module-18-for-gender-in-agriculture-sourcebook>

Jost, C., N. Ferdous and T.D. Spicer (2014). Gender and Inclusion Toolbox: Participatory Research in Climate Change and Agriculture. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), CARE International and the World Agroforestry Centre (ICRAF). Copenhagen, Denmark.
http://careclimatechange.org/wp-content/uploads/2015/09/CCAFS_CARE-Gender_Toolbox.pdf

Nelson, S., and S. Huyer (2016). A Gender-responsive Approach to Climate-Smart Agriculture. Evidence and guidance for practitioners. Practice Brief Climate-smart agriculture, GACSA, FAO, CGIAR-CCAFS,
<http://www.fao.org/3/a-be879e.pdf>.

Farnworth, C.R., L. Badstue, M.L. Jat, M. Rai, and T. Agarwal (2017). Integration of gender considerations in Climate-Smart Agriculture R4D in South Asia: Useful research questions. GENNOVATE resources for scientists and research teams. CIMMYT, CDMX, Mexico. <https://repository.cimmyt.org/handle/10883/19183?locale-attribute=en>.

Where scientists working on the biophysical or ecological realm to help raising the yield potential beyond breeding, the focus is wider oriented and includes the production process as such. From lessons learnt and evidence we know that generic phenomena or technologies cannot be solely developed outside of variable contexts. It has become more common use that no longer the connection of influences or impacts with human activities, motivations, regulations or normative behaviours can be ignored.

What was the case for breeding programs can be extended to technology development. Over the last ten years climate change research for agriculture and food has been more and more connected to the peoples involved by integrating social sciences aspects and researchers. Lately it was politically supported by the UN to address gender in climate change. In November 2017 the UN adapted a Gender Action Plan under the so-called Lima work programme on gender (FAO 2018).

Climate smart agriculture (CSA) is an example of addressing threats to agriculture by climate change through the introduction of new technologies and accompanying conditions such as training. These can be tested on gender-responsiveness in various ways. Below there is an example of a list with possible questions to raise around three various types of gender analysis:

Table 18.4 Objectives and Information Needs for Three Types of Analyses Pertinent to Designing Gender-Responsive CSA Projects

Type of Analysis	Goals, Elements, Guidance
1. Gender-responsive stakeholder analysis	<ul style="list-style-type: none"> a. Identify and assess the gender-mainstreaming capacity of the key organizations that may be involved in the project, which could represent the interests of men and women from different socioeconomic groups. Consider partnering with a women's organization to ensure that women's knowledge of climate and agriculture is incorporated into the project, and also to secure women's participation in decision making about CSA practices. Identify men's and women's specific needs for adopting CSA practices. b. Describe how information is shared between organizations and determine whether these channels will be sufficient for facilitating the work of the project. Identify who has access to the information available to the target community. c. Pay attention to who participates (include young people and households headed by women as well as men) and who has a say in decision making, because it will affect who benefits from project activities. Highlight men's and women's potential roles in the project, because this will help to clarify how women's participation will be guaranteed.
2. Gender-responsive problem analysis	<ul style="list-style-type: none"> a. Identify the specific risks associated with the impacts of climate change in the context of the project, identifying which risks are considered most serious by men and women, respectively. Discuss possibilities for reducing GHGs and any negative impacts on women. On the basis of the roles and responsibilities of men and women in different groups, identify who bears the risks of both climate-related impacts as well as climate change related activities. Identify the opportunities for reducing risks and whose livelihood activities are involved. b. Document men's and women's roles in relation to food security, including roles in producing and processing food and in managing agricultural activities. Document the strategies used by men, women, and youths to cope with food insecurity, especially in relation to the climate risks identified in the analysis. c. Describe which resources are present for coping with climate risks and which resources are needed. Investigate whether there are differences in access to or control over these resources and practices for men and women and how those differences may affect proposed solutions.
3. General gender analysis	<ul style="list-style-type: none"> a. Document what men and women do—their income-generating activities as well as their caregiving and household management work. An understanding of men's and women's division of labor and time use will be crucial for evaluating how CSA practices may change what people do and how they spend their time, which is crucial for ensuring that no single group of participants is overburdened. b. Describe what men and women know—which can include information on men's and women's relative literacy levels and the specific knowledge they call upon in times of climatic or food stress (such as opting to produce different varieties or species of crops and animals, or changing their food preservation and storage practices). c. Verify men's and women's capacity gaps that will need to be filled for successful CSA.

Fig. 11. Three types of analyses to designing gender-responsive CSA research projects. Source: World Bank et al. 2015, p. 32.

A 1.3 Gender in Agricultural Mechanisation

Recommended source:

Kawarazuka, N., G. Prain, L. Forsythe, S. Mayanja, N.N. Mudege, C. Babini and V. Polar (2018). Gender in Agricultural Mechanization: Key guiding questions. Lima, Peru: CIP.

<http://42q77i2rw7d03mfrd11pvzz.wpengine.netdna-cdn.com/wp-content/uploads/2018/03/Genovate-in-Agricultural-Mechanization.pdf>

A social approach to technology development that has been promoted for a long time is the integration of the user's perspective. In this social approach gender can be readily integrated. In a brief document by Kawarazuka et al. (2018) the authors present several case stories around mechanisation. They evidence the importance of gender integration and conclude with guiding questions to stimulate researchers in their future work.

Illustrative is the presented case story on potato drying equipment introduced in Peru. Dried potatoes are key ingredients of the popular traditional dish carapulcra. Because dried potatoes sell better than just the fresh tuber, these are seen as a good trade to develop for generating more income. Most potatoes come from the Andean highlands which are harvested at the end of the rainy season. Women are mainly responsible for the peeling and cooking of the potatoes and then laying them out as cooked pieces for sun-drying in the open air. Post-harvest researchers tried to improve the processing process and technique in a similar way as for processed foods for which they talked to local men. They brought modern drying equipment to accelerate the drying process assuming it would raise the efficiency of the overall system. Though, evaluation showed that the 'traditional methods' did dry the food products as quickly as the 'improved method', and cost less. The 'improved' method was not adopted. It was concluded that if the researchers had talked with the local women, they would have likely told that they were quite satisfied with sun-drying. They had problems with the peeling of the potatoes which took so much of their time while there was so much else to do at the moment in the season as well. (Kawarazuka et al. 2018, case 3).

Kawarazuka et al. (2018) also added a list with guiding questions at the end of the document we adjusted to research apart from planned interventions:

Checklist for gender integration in mechanisation

Are there any machines used for your targeted crops during the whole cycle from ploughing to selling?

If yes:

- What are these machines?
- Who owns them?
- Who uses them?
- Who are the non-users and why?
- Are there men and/or women who earn income as manual labourers in the study areas and for which tasks?

If no: Are there needs and/or challenges expressed by men and women?

See also next page

Does your study aim to develop new machines? (e.g. for cultivating, harvesting and processing)

If yes:

- What machine?
- Who are you targeting as users of the new machines and why?
- What may be possible barriers for some users and how best to mitigate these barriers?
- Who are the non-users and why?
- Are there any risks or unintended consequences you can think of? (e.g. creating envy among the community members; resulting in control of innovation by a small number of powerful members; landless women/men labourers lose their jobs)
- Are the machines usable for women in terms of the requirement of physical power and skills and knowledge needed for maintenance?
- Does your machine under study assume flexibility in labour- and financial-burden for men and/or women farmers?

Does the technology you are studying or developing depend on access to particular machinery?

If yes:

- Who owns that machinery (e.g. men, women)?
- Who can access the machinery and how?
- How does your intervention support those who don't have machines?

If no:

- Does the technology under study assume flexibility in labour for men and/or women farmers?

How will you address visible and hidden impacts of the possible use of the new technology?

Please critically consider how (new) technology/machines affect different people, for example:

- Are there changes in gender division of labour in other farming and non-farming activities?
- Are there differences in men and women's perceived benefits and positive / negative changes they face?
- What are impacts of the intervention on different socio-economic groups and their roles in the community

Based on Kawarazuka et al. (2018).

A 1.4 Gender integration in farming systems research

Recommended sources:

Fischer, G., S. Wittich and S. Fründt (2019). Gender analysis in farming systems and action research: A training manual. Ibadan, Nigeria: IITA. <https://cgspace.cgiar.org/handle/10568/100149>

Whereas breeding, climate smart agriculture and the development of technologies have a tradition of separating the development from contextualized use by different user groups, farm systems and value chains approaches often include peoples as agents in their research approach.

A Linkage Diagram is an interesting tool explained by Fischer et al. (2019) that helps visualizing possible connections to wider contexts. It can be used to identify possible social aspects which can be then analysed from a gender perspective. Fischer et al. (2019) show two ways of using Linkage Diagrams as a tool for gender analysis in two ways. First, researchers can apply it for reflecting upon and conceptualizing their own work. This way they can identify entry points for the gender analysis of the specific agricultural technology under investigation. Second, researchers can draw linkage diagrams with farmers to better understand their assessment of the technology, including its association with gender.

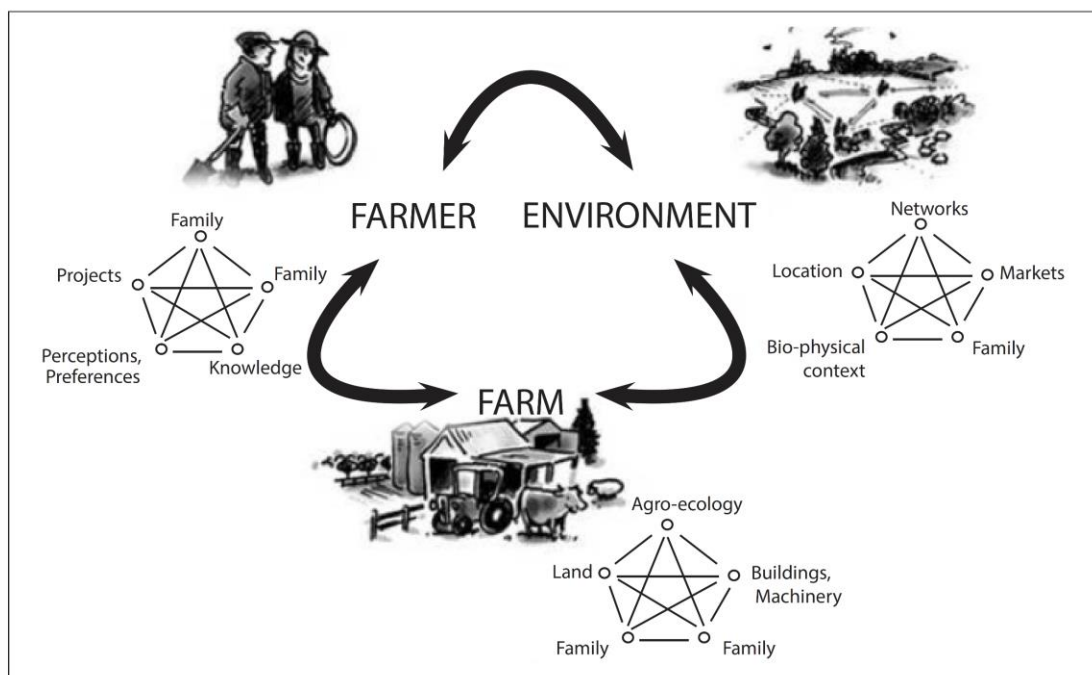


Fig. 12. The farming system. Source: Fischer et al. 2019, p. 4, reproduced from Darnhofer et al. (2012).

The above illustration of Darnhofer et al. (2012) as reproduced by Fischer et al. (2019) shows the interaction of agro-ecological resources, farming families members and their environment as their biophysical, geographical, infrastructural and social circumstances. Fischer et al. (2019) argue that it is acknowledged that women, men and children all participate in the system's activities, and may be differentially affected by the conditions, dynamics and outcomes of these activities. According to them, gender analysis can provide the necessary concepts, methods and tools to study the social domain and its interaction with other domains and is therefore promoted to:

- investigate the interaction between an agricultural innovation and gender relations. It enables to understand and anticipate contextualized constraints and potentials of technology adoption by

analysing the specific preferences, needs, and realities of multiple categories of women and men (Feldstein 2000, p. 71).

- target suitable farmers for participation and collaboration. Members of households or communities that have knowledge of a specific research topic and are critical for technology adoption can be better targeted (Feldstein 2000, p. 72).
- stimulate advancement in the areas of welfare, equity, and empowerment (ibidem). Gender analysis provides information to work towards social justice as one of the central commitments of the farming systems approach. (Fischer et al. 2019, p. 5)⁷

Fischer et al. (2019) support with their last item on their list that both agriculture or food security and climate change need to go hand by hand with the advancement of gender equality. This has been commonly promoted by the international agencies as FAO. In 2011, FAO director-general Jacques Diouf stated: 'Achieving gender equality and empowering women is not only the right thing to do; it is also crucial for agricultural development and food security' (FAO 2011a, foreword).

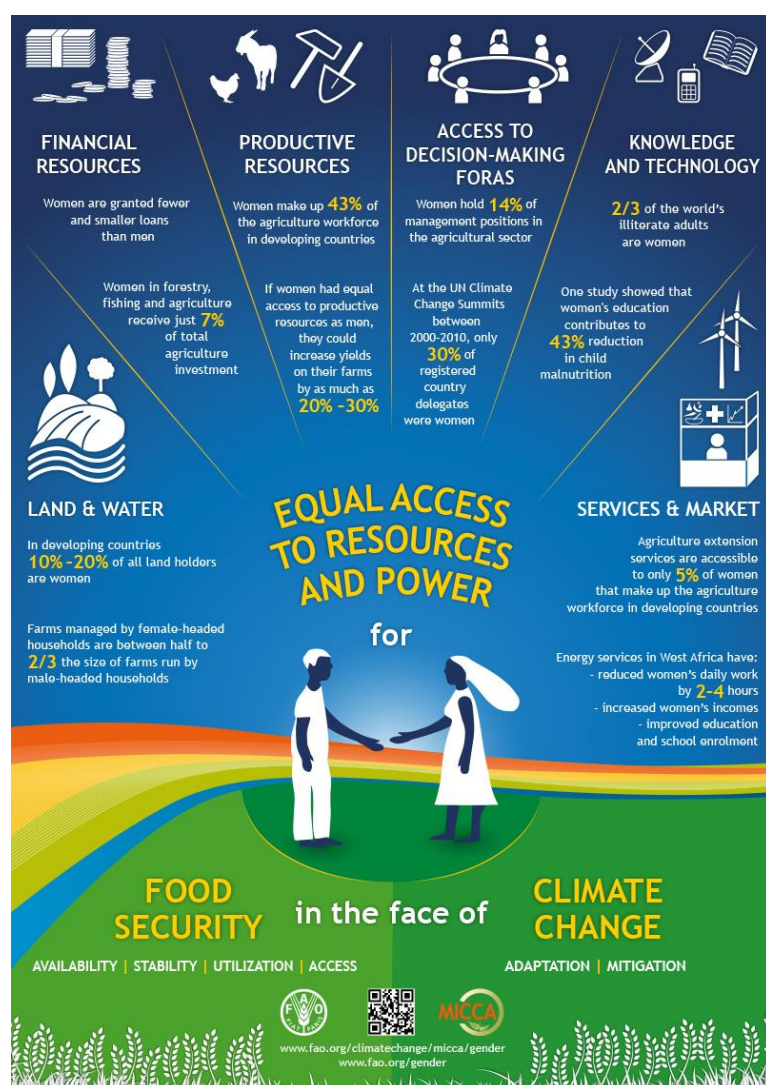


Fig.13. Equal Access to Resources and Power in the face of food security and climate change. Source: FAO 2013 <http://www.fao.org/resources/infographics/infographics-details/en/c/180754/>

⁷ For other references to the original documents, see Fischer et al. 2019, p. 5.

The above infographic of the 2013 FAO campaign for equal access to resources and power in the face of food security and climate change clearly shows the interconnectedness from access to biophysical resources to knowledge and technology to services and decision-making processes. They all agree on connecting various aspects and scales beyond farming in their perspective of development.

If contributing to ‘science for impact’ it is at least necessary to position research in these wider contexts of farming. Still, farming system research tends to disregard the connections between the family household and family farming. Due to the many relationships that are not monetarized and left out in economic calculations, farm-household and family relationships are substantial for understanding the whole farming system.

Illustrative is the overview characterization of the whole family farming system including the farm household:

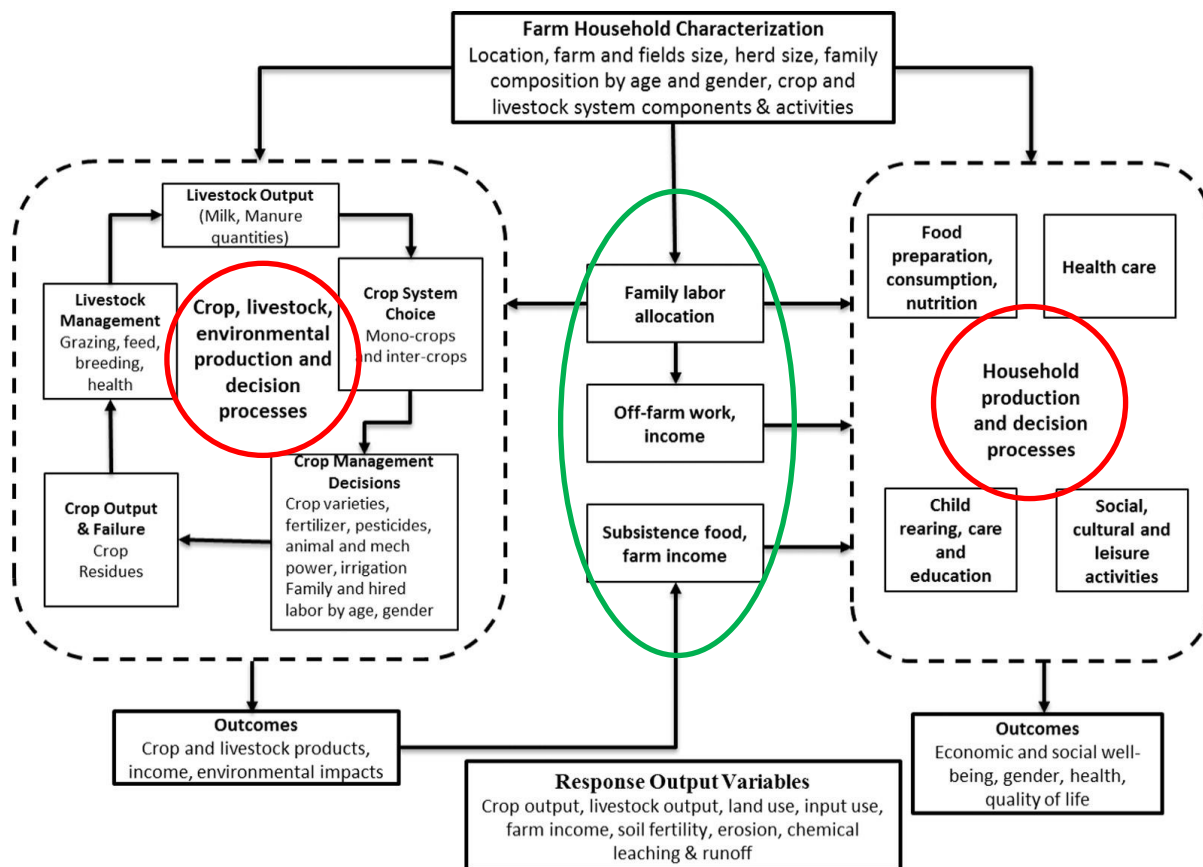


Fig. 14. Diagram of a farming system showing the household and production system components and their interactions as to include in farm system models (Jones et al. 2017, fig 5, p. 277)

The farm system approach has got a counterpart in value added chain approaches often characterised as processes from Field to Fork, or from Pond to Plate. These can be characterised by connecting the different chains. A claim to promote gender-responsive ways tells that it is required to include the analysis of m/f disparities, possible constraints and ways to reduce them in favour of increasing gender equality in all chains, equal access to resources and support services, equal distribution of work load and income, and well-being. (Quisumbing et al. 2014, esp ch 12, FAO 2016).

Other interesting examples of gender-integration are elaborated by Yellow Window (2009) for training purposes. These are still very illustrative to see how to integrate gender in three fields: Agri-food law, biofortification, and Sweet sorghum for food and fuel.

A 1.5 Wider system contexts included for transformative approaches

Quite seldom there is expertise in agricultural or food research departments that can help relating observed social phenomena to agriculture or food as such or the other way around. Exceptions are to be found in phenomena that affect the rural economy such as rural outmigration and migrant labour, labour substitution by machines or other technologies, but also phenomena regarding cultural annotations of rurality, farming or food.

An example is that only recently health is connected to agriculture and food through nutrition. However, this was not that much related to disease and health care, or gender-based violence, rural male suicides, etcetera, which phenomena are known as occurring in rural surrounding in many places in the world. Interesting is, though, that gender specialists associated with CGIAR institutions have recently started to bridge the gap between agriculture and such phenomena by cooperating with other expert institutes to take new roads in integrative approaches. (World Fish and Care, Pro Mundo, Oxfam)

Acknowledging the wider context to position the research does not simplify the research approach and methodology. This is even more the case when taking 'science for impact' seriously by also involving the possibly affected people. Through the cooperation with NGOs that specialise in gender and development, researchers in the food and agricultural field learned about their gender approaches, and started to discuss what would be most appropriate to adjust and adapt in the agricultural and food sciences in various research contexts. The available approaches will be presented in the next section whereas transformative gender approach challenges the status-quo of inequalities most.

This below graph illustrates how such integration of wider contexts can be schematized:

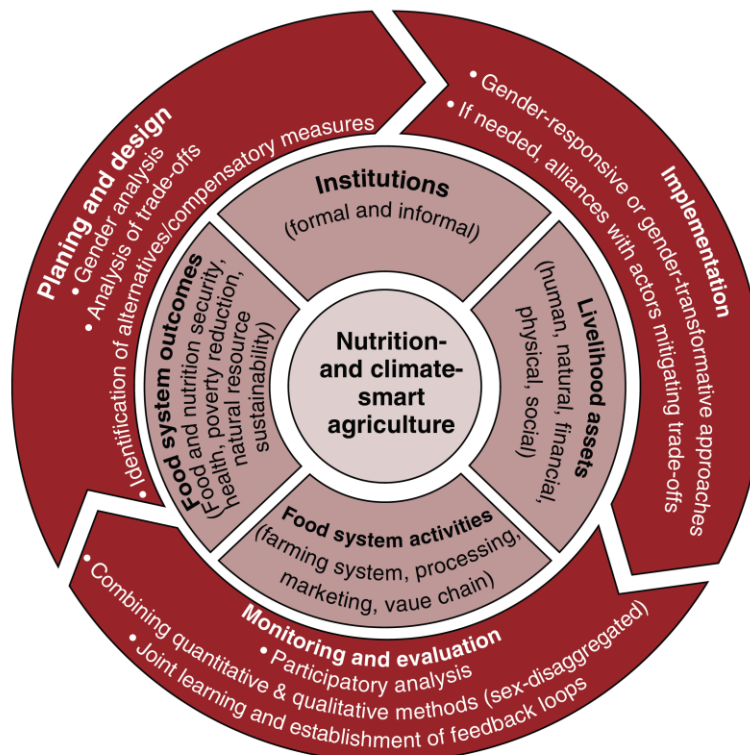


Fig 15. Framework for enhancing Gender in Nutrition- and Climate-Smart Agriculture, copied in World Bank et al. 2015, p. 6, as reproduced from Beuchelt and Badstue 2013.

ANNEX 2. Illustrations of various gender+-approaches

A 2.1 Case stories illustrating various gender+-approaches

For illustrating the various approaches, Lawless et al. (2017)⁸ collected case stories of which we adjusted and made a selection for research purposes in the below boxes:

Examples of gender-reinforcing research

- Development research might hold community consultation meetings in settings where men’s voices may dominate, and therefore minimizes or not captures the voices of women or youth. This can further marginalize the voices of people who have migrated to a village for marriage (and do not have primary rights to land) as their perspectives may not be prioritized.
- In Solomon Islands, development research working with communities has sometimes only introduced new agricultural technologies to men, overlooking the fact that most women are also involved in subsistence farming work. This is made worse if all the agricultural researcher and extension officers are men because certain cultural beliefs may restrict women from attending training sessions or working closely with males if their husbands are not present.
- When development research holds sessions in locations that may require travel outside of a village, women may face difficulties attending due to their household and child care responsibilities, which are less of a constraint for men. Consequently, only very few women may have the opportunity to attend these sessions..

Examples of gender-accommodating research

- “Because men tend to dominate decision-making processes within communities, we deliberately separate women, men and youth into groups for discussions when researching and planning livelihood projects to gain equal perspectives from all community members” (pers. comm. 2017).
- Some development research initiatives encourages equal numbers of women and men in leadership positions (e.g. within management groups or committees such as those established to manage marine areas) to ensure equitable participation. While stronger representation of women in leadership is important, this approach does not contribute to addressing imbalances in decision-making power. Women tend to be confined to secretarial or administrative roles and, in these cases, this does not translate into a greater voice or influence for women.
- Focusing on development research such as homestead aquaculture ponds or women’s savings clubs “works with” the fact that women are often responsible for household work and caregiving by having the opportunity close to home. While women may benefit from these kinds of development, their overall workload may increase or household tensions could arise as their attention is pulled to this new task.

⁸ For the references to the original documents, see Lawless et al. 2017, pp. 7-9.

WorldFish examples of gender-transformative research in different contexts

- In Solomon Islands, gender-transformative research was applied to an aquaculture project to develop homestead ponds in Malaita Province. The facilitators made conscious efforts to engage married couples in a farmer workshop. They used tools that encouraged participation of both women and men, such as separately drawing a farming systems diagram that demonstrated that although men were the “face” of fish, women and children played a significant role. One couple shared their story of how they work together and share the workload, and this encouraged open discussions in the group and promoted the idea that other couples could benefit from working as a team. Since this workshop, women have attained greater confidence to attend other workshops and have shown increased confidence to speak in front of men. Men now recognize the importance of women’s roles in this livelihood work.
- In an aquaculture extension program in Bangladesh, the gender-transformative approach meant involving women and men farmers—and sometimes powerful household members such as mothers-in-law, in facilitated sessions over a period of weeks, using participatory exercises to encourage surfacing of norms and reflection on these. Another initiative in Bangladesh is also running similar sessions just for community leaders.

A 2.2 Checklist to identify various gender⁺-approaches

Recently OXFAM (Parvez Butt et al. 2019) distributed a short note in which earlier distinguished approaches were disentangled and presented in a checklist with questions to identify where one stands. For this checklist they did not use ‘accommodative approach’ but differentiated it in gender-sensitive and gender-responsive approach. Nevertheless, it is based on the same original model. This was earlier elaborated as shown below by Parvez Butt et al. (2019). From the perspective of the original model gender-aware would be the overarching dimension for the differentiations listed as third, fourth and fifth.

Gender Research Rubric	
<i>Gender-blind</i>	Gender (the differentiated and intersectional experiences of women, men, and gender diverse groups) is <i>not</i> considered in the research project; not even in its conceptualization or its rationale.
<i>Gender-aware</i>	Gender is considered in the research project's rationale, but is not an operative concept in the design and methodology.
<i>Gender-sensitive</i>	Gender is considered in the research project's rationale, project design and methodology. Data is disaggregated by gender, and gender is also considered in the composition of the research team and reviewers. Gender-sensitive research does not (yet) extend to analysis and action to address gender inequalities.
<i>Gender-responsive</i>	Gender is considered in the research project's rationale, design, and methodology and is rigorously analysed with a view to inform implementation, communication, and influencing strategies. Gender-responsive research does not (yet) address the underlying structural factors such as norms and power relations that contribute to gender inequalities.
<i>Gender-transformative</i>	Examines, analyses, and builds an evidence base to inform long-term practical changes in structural gender power relations and norms, roles and inequalities. Gender-transformative research should lead to sustained change through action (e.g. partnerships, outreach, and interventions, particularly with women's rights organizations).

Fig.16. Gender research rubrics from gender-blind to gender-transformative approaches. Source: Parvez Butt et al. 2019, p. 3.

In line with the above rubrics Parvez Butt et al. (2019) made a list with questions to help assess what to consider and include to meet the requirements of each distinguished approach. The authors explain that they skipped gender-blind as they argue that awareness of gender dynamics needs to be an integral part of any knowledge initiative and no research should be gender-blind. They start with the overarching dimension of gender-aware approaches in which general notions are addressed. Every next box implies all aspects of the former one as well and adds on that. (Parvez Butt et al. 2019):

Gender-aware research
<p>General:</p> <ul style="list-style-type: none"> Are you using appropriate terminologies and language, i.e. avoiding terms/classifications that apply exclusively to one sex/reflect gender stereotypes (housewife, fishermen), or using language that assumes only two genders (such as the ‘opposite gender/sex’, or ‘either gender’)?
<p>Background and rationale:</p> <ul style="list-style-type: none"> Does this research connect to any of the gender projects/campaigns/programmes in your organization? Do you consider the gendered dimensions of your research topic in its conceptualization? For example, in research looking at the impacts of taxation; do you consider how women may be differentially or disproportionately affected, compared with men?
<p>Dissemination, engagement and influencing</p> <ul style="list-style-type: none"> For internal audiences, will you share your report with gender experts in your organization?
<p><i>Explain why your research cannot progress to the gender-sensitive category:</i></p>

<p>Gender-sensitive research</p> <p>In addition to all the questions for gender-aware, all the following criteria need to be met</p> <p>General:</p> <ul style="list-style-type: none"> • Do you consider the gender-specific risks associated with this research and have you designed measures to mitigate against these risks? • Have you considered the gender balance in the project consortium or team? • Are you collecting/using gender-disaggregated data whenever possible to fully reflect women, girls, and members of gender-diverse communities' experiences? <p>Background and rationale</p> <ul style="list-style-type: none"> • Is there a research objective that identifies gendered barriers and seeks solutions? <p>Research design</p> <ul style="list-style-type: none"> • Do the research questions explicitly seek to uncover the experiences of women, girls, men, boys, and other gender-diverse communities in relation to each other? • When thinking of the research or data gaps, do you engage with how gender may play a role in producing such gaps? <p>Methodology</p> <ul style="list-style-type: none"> • Were women, men, and members of gender-diverse communities considered in the sampling? Be intersectional: consider also which genders are participating in the research process by, for instance, age, ethnicity, class, income, education level, and make attempts to reach out to a diverse population, especially those from socially excluded groups. • Does the research use participatory or collaborative approaches or methodologies in the research process (i.e. work with gender-diverse local groups to develop interview questions, facilitate interviews/focus groups, and/or conduct validation workshops)? • For qualitative methods such as focus groups and interviews, were there gender-specific spaces? Mixed groups can be fine, as long there is an opportunity to have separate spaces for different genders as well. Having these interviews led by facilitators of the corresponding gender is also recommended. • For quantitative methods, were issues pertinent to women and/or other gender-diverse groups taken into account when developing indicators/categories? <p>Dissemination and influencing</p> <ul style="list-style-type: none"> • For external audiences, will you reach out to women's organizations, networks, and/or associations? Or sexual diversity and gender-identity organizations, if appropriate? <p><i>Explain why your research cannot progress to the gender-responsive category</i></p>
<p>Gender-responsive research</p> <p>In addition to all the questions for gender-aware and gender-sensitive categories, all the following criteria need to be met</p> <p>Research design and methodology</p> <ul style="list-style-type: none"> • For quantitative/qualitative methods, are the data collection tools designed to take into account and challenge gender stereotypes and social and cultural factors that may introduce gender bias into the data? • A few examples include: collection of employment data that excludes informal and unpaid care work, questionnaires that consider head of households to only be men; questions that assume rather than challenge gender stereotypes using terms such as 'housewife' or 'fishermen'; questions asked of proxy respondents (usually male heads of household) rather than individuals themselves. <p>Analysis</p> <ul style="list-style-type: none"> • Does the analysis draw out the critical similarities and differences between men's, women's, and members of gender-diverse communities' experiences of the issue or problem? • Does the analysis unpack the gender dimensions of social groups; for example, does it unpack 'women' looking at the intersectionalities of income, race, and class? <p>Dissemination, engagement and influencing</p> <ul style="list-style-type: none"> • Are you presenting the experiences of different genders in a way that captures their diversity? i.e. disaggregating gender differences into smaller categories of race, class, ethnicity, marital status, age, and so on <p><i>Explain why your research cannot progress to the gender-transformative category</i></p>

Gender-transformative research
In addition to all the criteria for gender-aware, gender-sensitive and gender-responsive research, the following criteria need to be met
<p>Background and rationale</p> <ul style="list-style-type: none"> • Do you consider how social norms, power relations and other structural factors underlying gender inequality affect your research topic, process and protagonists? • Does your research analyse, recognize and seek to transform unequal power dynamics between men and women and/or other gender-diverse groups?
<p>Research design and methodology</p> <ul style="list-style-type: none"> • Does the research strive for full and meaningful participation of different gender diverse and socially excluded groups as 'change agents' during different stages of the research cycle, including defining the research agenda, analysis, validation workshops, and use of the research results? • Do the research questions explore the structural power relations that sustain gender inequalities in relation to the research topic? Do they address possible solutions and mechanisms for change with participants? • Is there a research objective that identifies gendered barriers and seeks solutions? • Will there be opportunities throughout the research cycle to be reflexive and aware of your own gender assumptions, biases and power as a researcher? • Do the Terms of Reference/Scope of Work recognize gender identity as a spectrum and consider the needs of gender-diverse communities? • Do they consider the use of language, in particular the use of 'woman'/'man' when referring to social actors, and 'female'/'male', 'masculine'/'feminine' when referring to the construction of someone's social identity? • Does the research methodology enable critical learning, reflection and questioning of gender inequality by all involved in the research process?
<p>Analysis</p> <ul style="list-style-type: none"> • Does your power analysis consider gendered inequalities of power? What strategic approaches will be used for responding to them? • Do the case studies highlight the initiative and agency of women, girls, and members of gender-diverse communities (rather than just portraying them as vulnerable and passive groups)?
<p>Dissemination and influencing</p> <ul style="list-style-type: none"> • Are you explicitly challenging the harmful narratives around norms, power inequalities, patriarchy and other structural factors that promote gender inequalities in your messaging and communications? • Do the solutions and recommendations you identify seek to lessen the impacts of gender inequality and also to fundamentally challenge and end it? • Are there women's organizations that can be partnered with for the purposes of your research? If so, have you reached out to them?

Fig.17. Gendering research, a checklist. Source: Parvez Butt et al. 2019.

ANNEX 3. Analysis of level of gender+ integration. Score table

Research (coded)	Women only (score=1) or gender approach (score=2)	Level of gender+ analysis, level 1-3 (score=1; level 4-6 (score=2)	Integrated scales: one scale (score= 1), more (score= 2)	Gender intersecting with other social dimensions: No (score= 1); Yes (score=2), option which?	Total score	Extra notes or remarks
No 1						
No 2						
Etc.						
Total N=	Total score 1; score 2	Total score 1; score 2	Total score 1; score 2	Total score 1; score 2	Total score	
	% score 1; % score 2	% score 1; % score 2	% score 1; % score 2	% score 1; % score 2	% score	

Fig. 18. Analysis of Level of gender+ integration - Score Table⁹

⁹ This list was introduced in the guidelines for T 6.1 of the Gender-SMART project, EU-Horizon 2020-no 824546.

ANNEX 4. Trajectory towards sustainable gender⁺ integration

Building a community of practice calls for:

- Starting by inviting a strong scholar addressing an appealing case that exemplifies the outcome of gender⁺ -integration
- Keeping on inviting a wide circle of interested scholars of various disciplinary backgrounds
- Making advanced gender⁺ scholars committed to invest in the efforts (even if from another institution in town)
- Narrowing down to specific field(s) with the group interested if necessary

To start doing gender⁺ integrated research asks for:

- Organising participatory training modules for interested colleagues that present and facilitate to discuss various gender⁺ approaches and applications in cases in the fields of interest
- Elaborating in a workshop a case of your own projects or a research question in your subject area to identify its gender⁺ aspects throughout all stages of the project cycle
- Elaborating in a writing workshop a set up for a research proposal that integrates gender⁺
- Elaborating within a multidisciplinary group with gender⁺ experts: one research proposal to be submitted or reviewed
- Piloting together with gender⁺ experts: one research project to integrate gender⁺ and/or write an article which includes gender⁺ aspects to be submitted or reviewed
- Meanwhile organising seminars around readings, recorded webinars and/or presentations
- Leaving room for various individual learning processes but keep on stimulating exchange and expressing after every session: what learnt – take home at the end of each session

Consolidating gender⁺ integration asks for:

- Making your work visible and having open events that welcome new persons
- Taking on a research project which is near to the institutional mission
- Securing ways to be integrated in institutional events and communication for exposure (around special activities, foreign visitors, institutional media)
- Securing resources: allowance to invest time as part of your tasks, money for coffee, drinks etc, support by administrative staff or communication services
- Keeping expressing the need of two legs (matrix): gender⁺ expertise and gender⁺ integration within this effort to work together and not as separate

Sustainably securing gender⁺ integration calls for:

- Organising an institutional pledge when addressing SDGs to explicitly include SDG 5 and 10
- Organising an understanding and recognition that both gender⁺ expertise and gender⁺ integration is part of mandate: designated Ftes within a matrix structure of gender⁺ experts and gender⁺- sensitive colleagues who together work on integrating gender⁺ in research
- Organising a mandate and visibility of the group as a recognized and named entity in the organizational structure, best with designated office space but at least virtual.