



Global Observatory for
Accurate Livestock Sciences

Mythos Nahrungsmittelkonkurrenz oder die
Tiere sind kein Problem für die Umwelt
aber für die Politiker schon
SVT Frühjahrstagung 04. April 2024

Animal Frontiers – April 2023



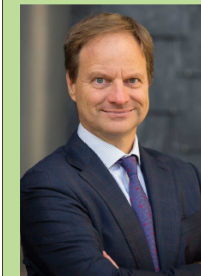
System Summit final documentation on Sustainable Livestock, which we believe is a most appropriate statement to conclude this editorial piece. It reads: *“Human civilization has been built on livestock from initiating the bronze-age more than 5000 years ago toward being the bedrock of food security for modern societies today. Livestock is the millennial-long proven method to create healthy nutrition and secure livelihoods, a wisdom deeply embedded in cultural values everywhere. Sustainable livestock will also provide solutions for the additional challenge of today, to stay within the safe operating zone of planet Earth’s boundaries, the only Earth we have.”*

Acknowledgments

This Special Issue of Animal Frontiers has been the product of 36 coauthors, and many more unnamed researchers who provided the groundwork for evidence and insights. We are more thankful than words can express for them to contribute their knowledge to this publication. Fourteen authors also presented their findings at the International Summit on the Societal Role of Meat, which was conducted on October 19/20, 2022 in Dublin. The Summit was hosted by Teagasc, the Irish Agriculture and Food Development Authority. Numerous helpers at Teagasc made the Summit possible, among whom we must especially single out the untiring organizational efforts by Dr. Kaye Burgess and Ciara McDonagh. We owe our sincere gratitude to them. At the Summit we were fortunate to welcome close to 200 leading decision makers from the global meat sector, hailing from public administration, associations, the meat and livestock production industries, and the sciences. Across four workshops, they provided invaluable feedback for refining the line of reasoning and avenues for further investigation. Almost 400 viewers watched the proceedings online. The sessions were skillfully moderated by Diana Rogers, Dr. Peter Ballerstedt, and Dr. Theo de Jager. A pre-workshop with around 50 participants for inviting feedback was organized by the Global Meat Alliance in Sacramento, California on September 2, 2022, under the masterly stewardship of Ashley Gray, Connor McGovern, and Kit Arkwright. Susan MacMillan has been an always-giving source of support in our communications. Our deep appreciation to all of you! We are also most thankful to the American Meat Science Association to give us the opportunity to provide their annual Special Issue of Animal Frontiers for our topic. The AMSA Managing Editor, Dr. Anna Dilger, and the Editor-in-Chief, Dr. James L. Sartin of Animal Frontiers, and their network of reviewers and production staff in the background have not only been most helpful and supportive, but also enormously patient and yielding to our many extraordinary demands on publishing this Special Issue. Dr. Marianna Behrends provided all coordination between the editors and the authors streamlining the process in an amazing manner. Their dedication to our science cannot be praised enough. As the two guest editors, we want to emphasize that this Special Issue as well as the International Summit in Dublin has been foremost the product of an incredibly dedicated team effort by six individuals, whose

lives crossed paths first at the International Congress of Meat Science and Technology and Reciprocal Meat Conference leading us to this mission. Each member of the team already had a full plate of jobs and cleared the deck to make this effort possible. We therefore consider this Special Issue to be the work of all six members of the organizing team, who have as much claim to creatorship as us. Please therefore consider Collette Kaster (CEO, American Meat Science Association), Dr. Mohammad Koohmaraie (President, Meat Division, IEH Laboratories and Consulting Group), Dr. Rod Polkinghorne (CEO, Birkenwood International), and Dr. Declan Troy (Assistant Director of Research, Teagasc) as equal cocreators. And as last but never the least, we must express our thanks to dedicated team members behind the scenes: Urs Boesswetter, Dr. Holly Cuthbertson, Taras Iliushyk, Enrike Maree, and Alix Neveu who diligently supported all the planning, preparation, and execution throughout.

About the Author(s)



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Frédéric Leroy graduated as a Bioengineer (Ghent University, 1998) and obtained a PhD in Applied Biological Sciences at the Vrije Universiteit Brussel (VUB, 2002), where he now holds a professorship in food science and (bio)technology. His research deals with food processing, human and animal health, and interdisciplinary food studies. He is a Board member of various academic nonprofit societies, that is, the Belgian Association of Meat Science and Technology

(president), Belgian Society for Food Microbiology (president), and Belgian Nutrition Society. On a nonremunerated basis, he also serves on various Scientific Boards (e.g., the World Farmers’ Organization and the FAO/COAG Sub-Committee on Livestock).

The Dublin Declaration – October 2022

The Dublin Declaration

HEIMEN UNTERSCHRIFTEN AKTIVITÄTEN AUTHORSHIP ENGLISCH FRANZÖSISCH PORTUGIESISCH SPANISCH DEUTSCH ITALIENISCH

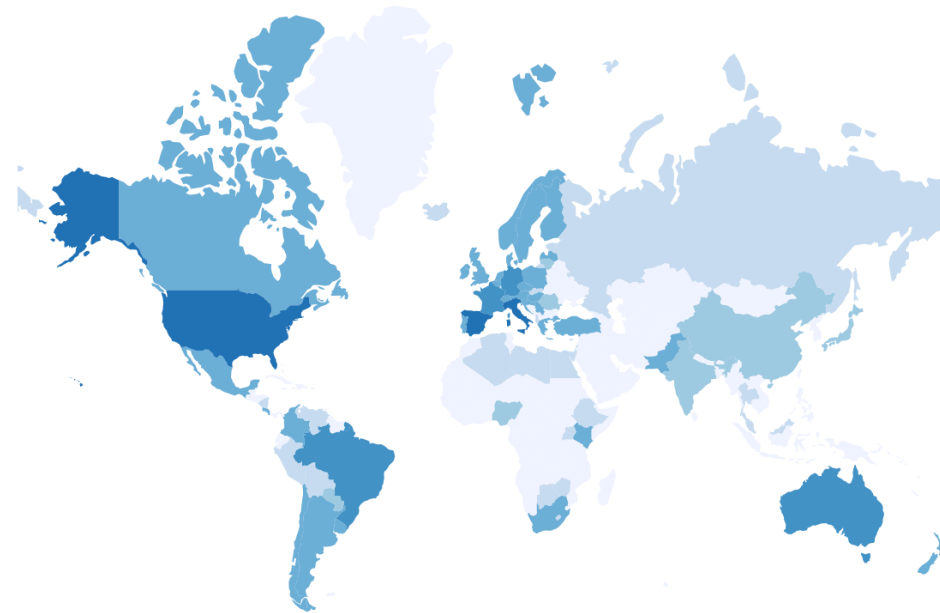
DIE DUBLIN DEKLARATION DER WISSENSCHAFTLER ZUR GESELLSCHAFTLICHEN ROLLE DER NUTZTIERHALTUNG

Absicht dieser Deklaration

Die Nutztierhaltung muss auf der Grundlage höchster wissenschaftlicher Standards weiterentwickelt werden. Sie ist für die Gesellschaft zu kostbar, um Opfer von Vereinfachung, Reduktion oder Fanatismus zu werden. Nutztiere müssen in der Gesellschaft integriert sein und breite Zustimmung finden. Dazu werden Wissenschaftler aufgefordert, verlässliche Nachweise für ihre Ernährungs- und Gesundheitsvorteile, ökologische Nachhaltigkeit, soziokulturelle und wirtschaftliche Werte sowie Lösungen für die vielen erforderlichen Verbesserungen zu liefern. Diese Erklärung soll den vielen Wissenschaftlern weltweit eine Stimme geben, die in den verschiedenen Disziplinen fleißig, ehrlich und erfolgreich forschen, um zu einem ausgewogenen Blick auf die Zukunft der Nutztierhaltung zu gelangen.

Herausforderungen für Nutztiere

Die heutigen Lebensmittelsysteme stehen vor einer beispiellosen doppelten Herausforderung. Einerseits wird gefordert, die Verfügbarkeit von Nahrungsmitteln aus Nutztieren (Fleisch, Milchprodukte, Eier) zu erhöhen, um dazu beizutragen, den ungedeckten Ernährungsbedarf von schätzungsweise drei Milliarden Menschen zu decken, für die Nährstoffmängel zu Wachstumshemmung, Auszehrung, Anämie und anderen Formen der Unterernährung beitragen. Andererseits stellen einige Methoden und der Umfang von Tierproduktionssystemen Herausforderungen in Bezug auf Biodiversität, Klimawandel und Nährstoffflüsse sowie Tiergesundheit und Tierschutz im Rahmen eines umfassenden One-Health-Ansatzes dar. Angesichts des starken Bevölkerungswachstums, das sich hauptsächlich auf sozioökonomisch gefährdete und städtische Bevölkerungsgruppen in der Welt konzentriert, und wo ein Großteil der Bevölkerung für ihren Lebensunterhalt auf Nutztiere angewiesen ist, wachsen die Herausforderungen in Bezug auf Versorgung und Nachhaltigkeit exponentiell und die Förderung evidenzbasierter Lösungen wird immer dringender.



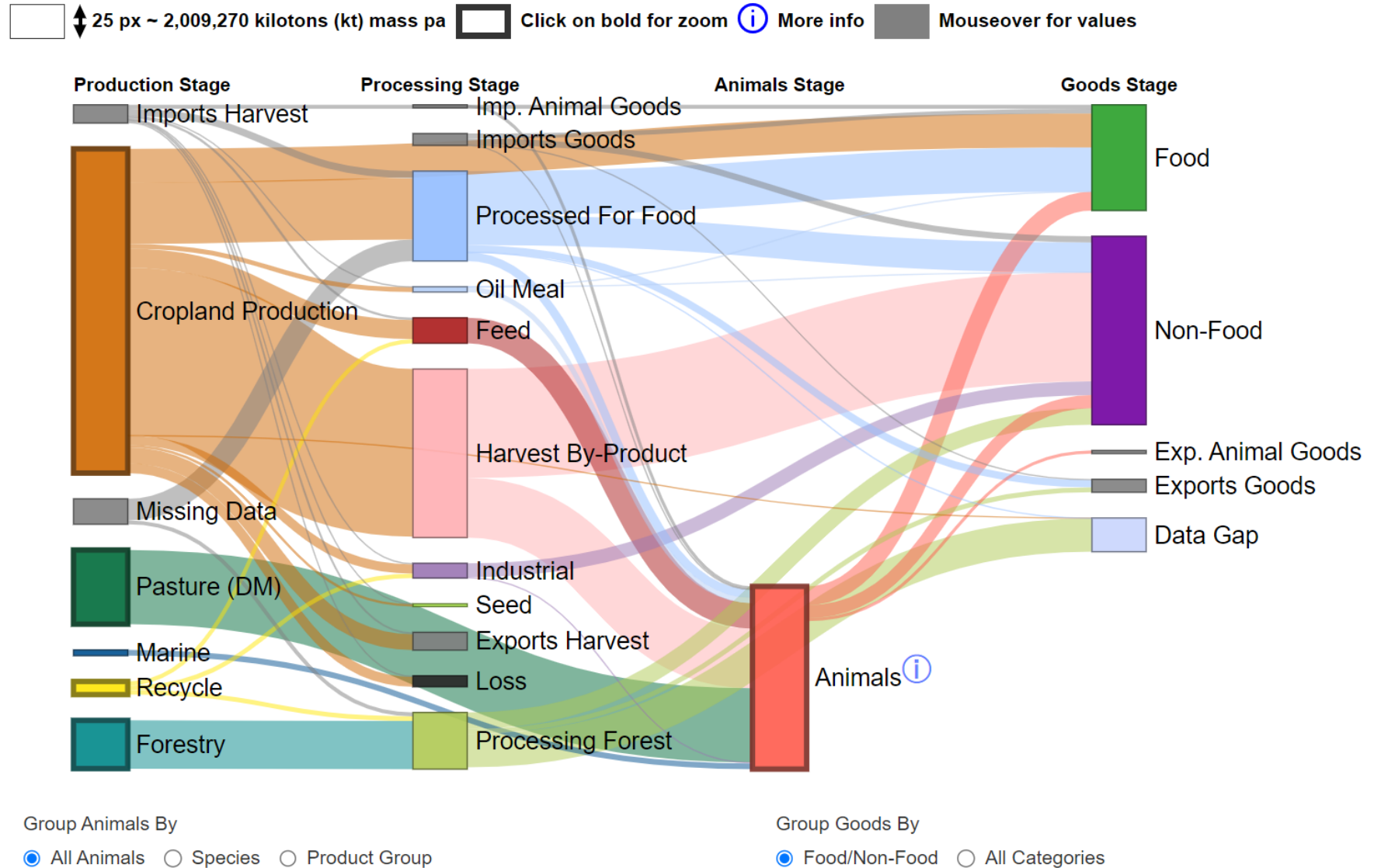
1190
UNTERSCHRIFTEN

Letzte Aktualisierung:
02. Februar 2024

Warum müssen wir genau schauen?



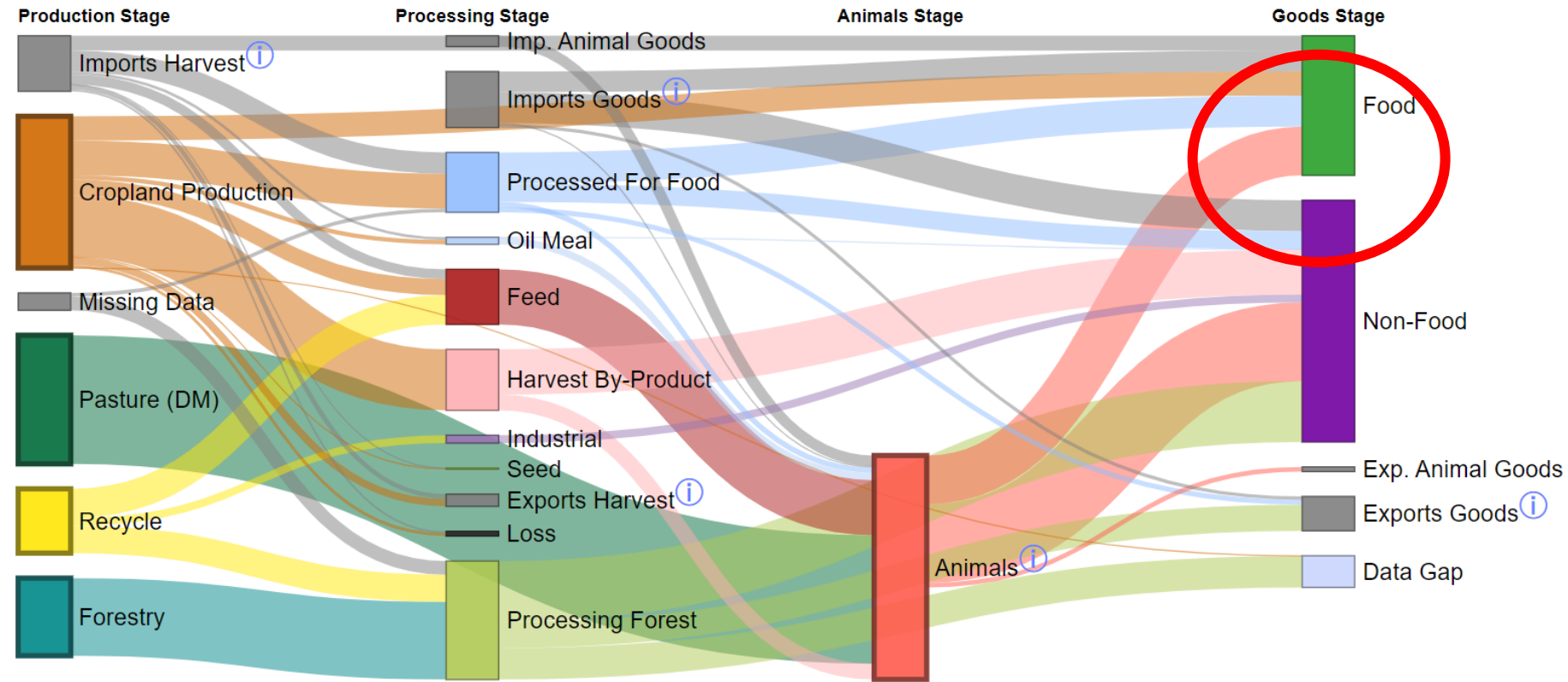
PLANET V 2.0/FAO Syn - all biomass/World/2020



GOALSciences.org – Schweizer Food System

PLANET V 2.0/FAO Syn - all biomass/Switzerland/2020

25 px ~ 1,383 kilotons (kt) mass pa Click on bold for zoom More info Mouseover for values



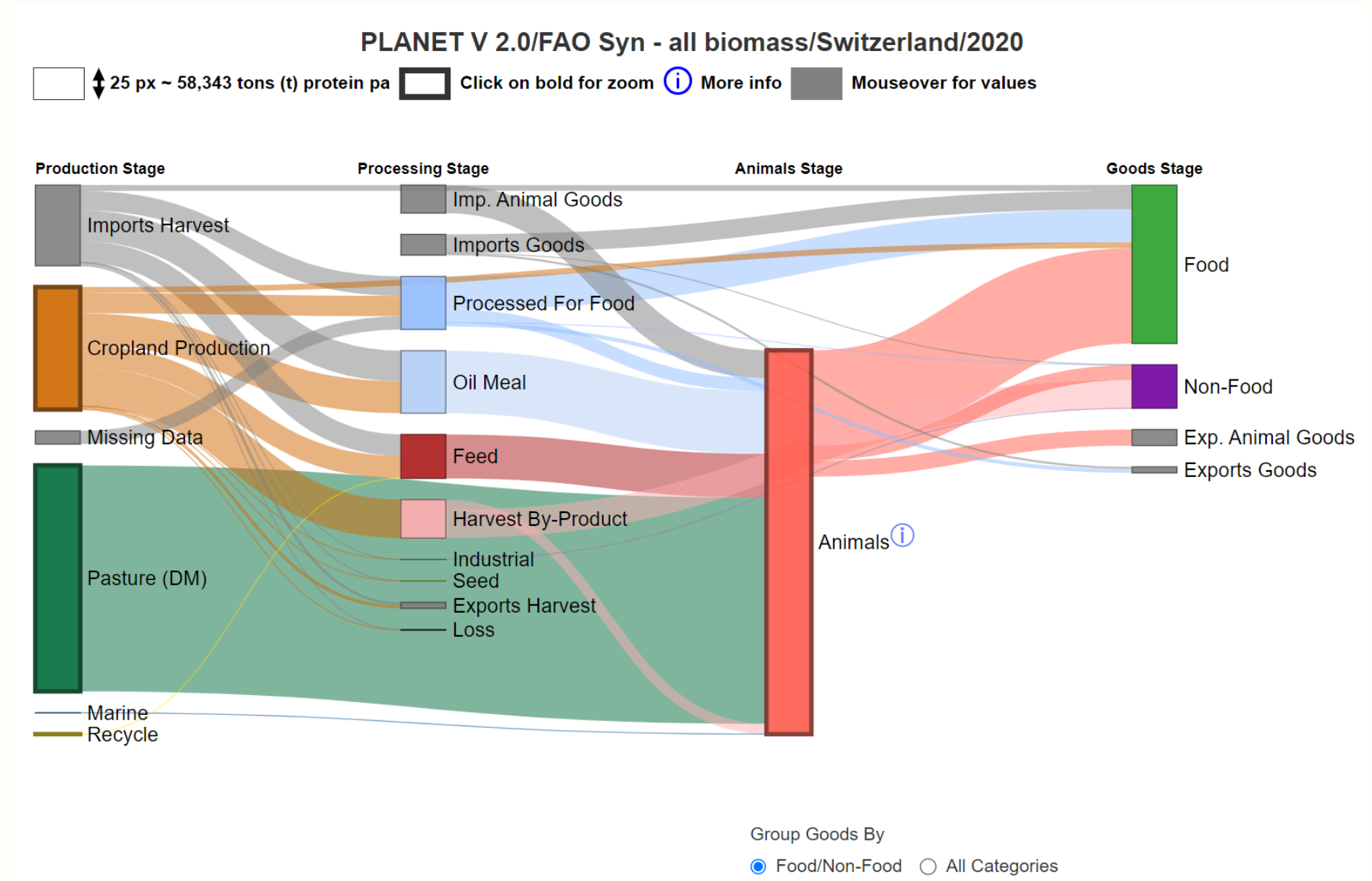
GOAL
Sciences



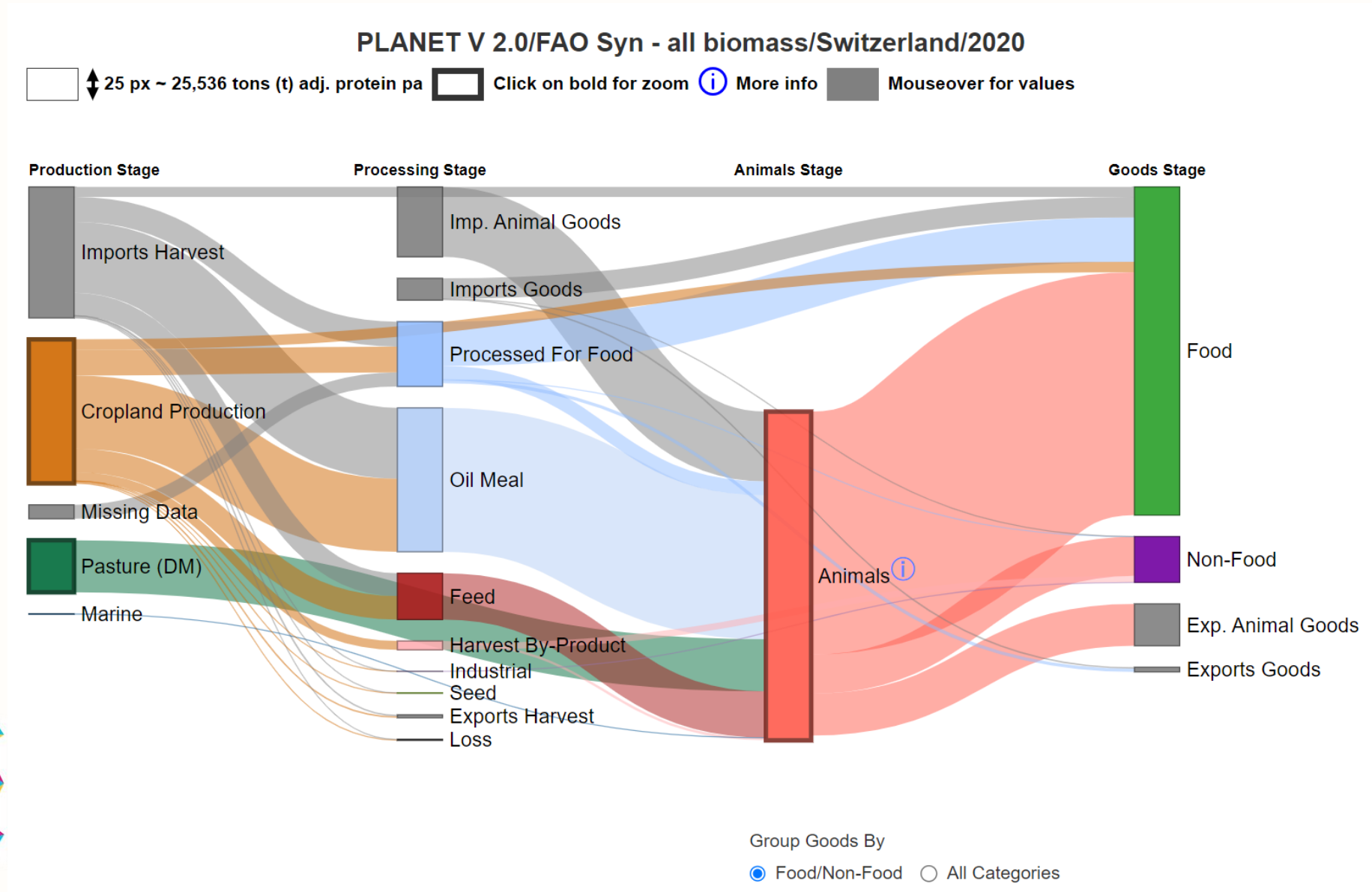
Group Animals By
 All Animals Species Product Group

Group Goods By
 Food/Non-Food All Categories

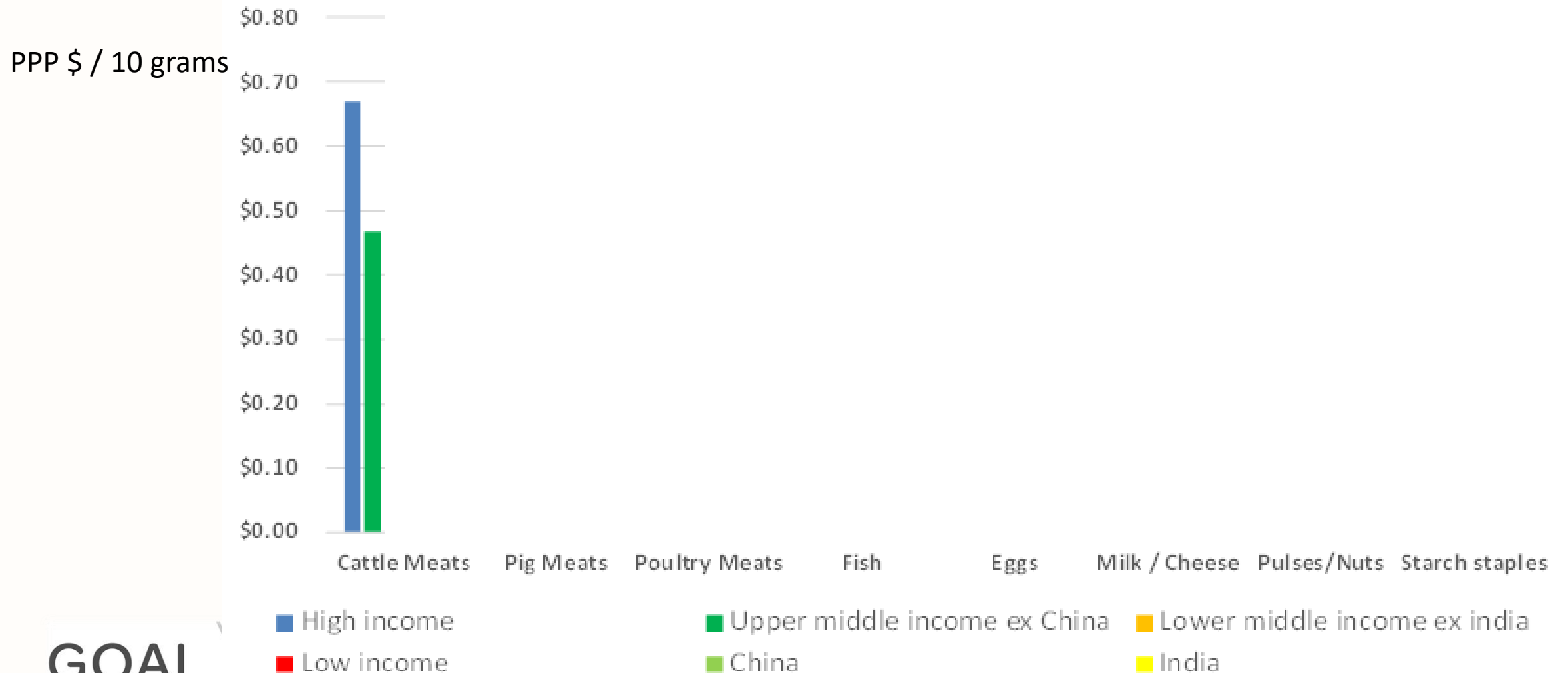
GOALSciences.org – Schweizer Proteine



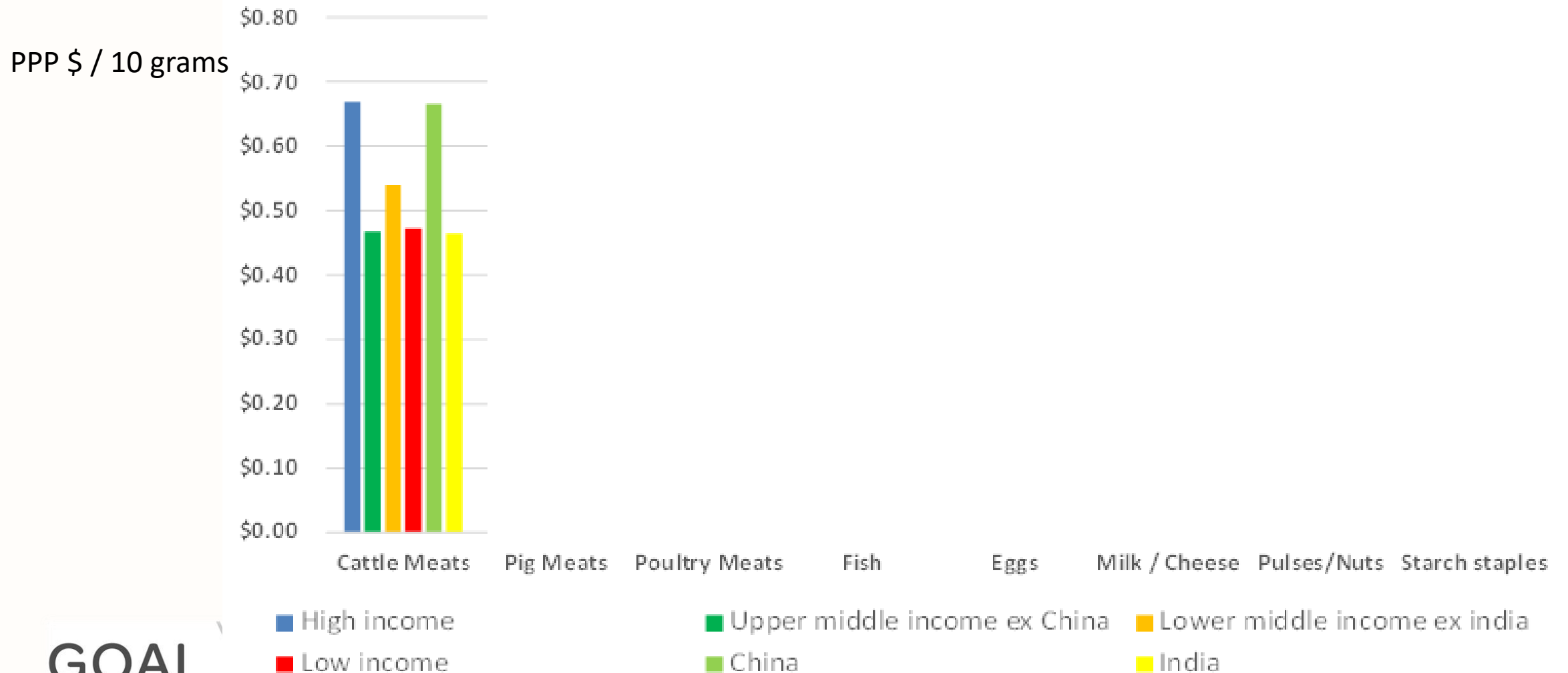
GOALSciences.org – bioverfügbare Proteine



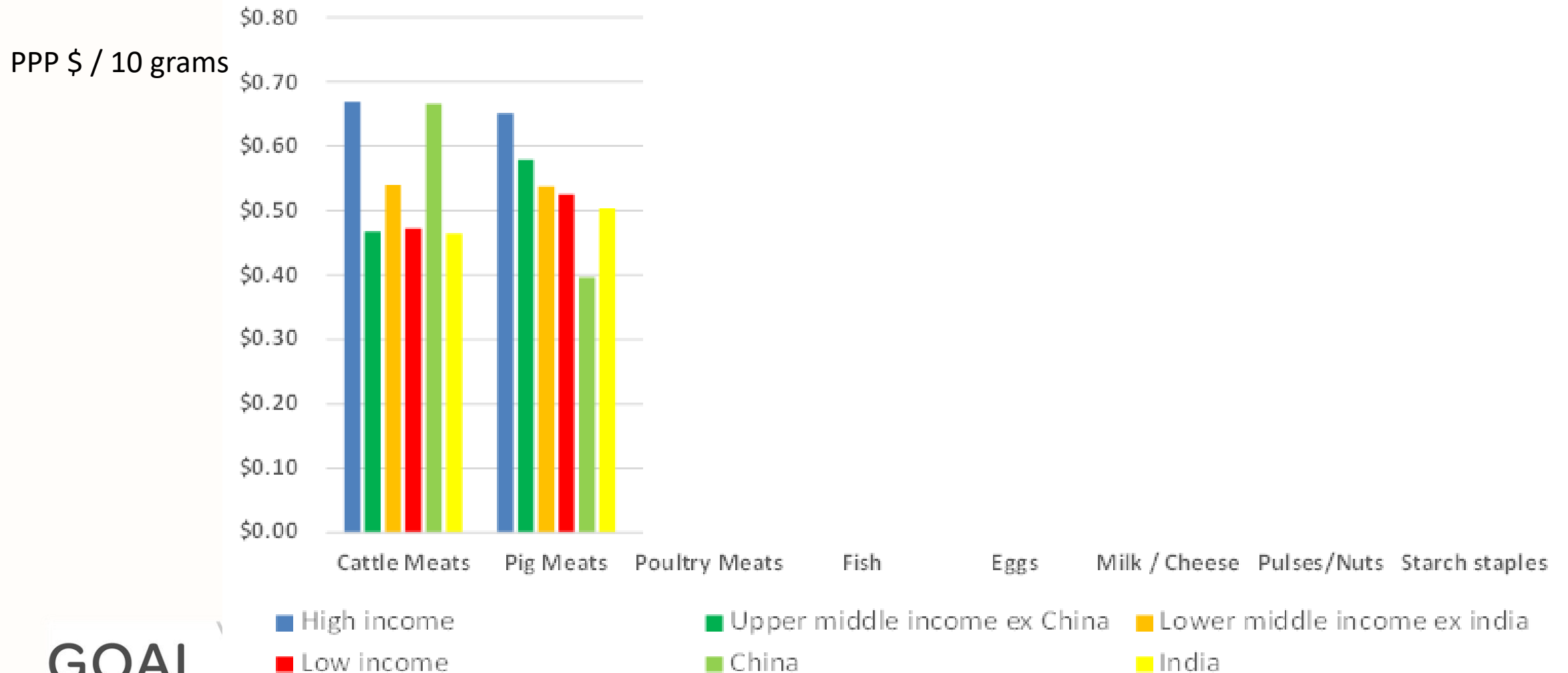
Kosten für Protein nach Region und Art



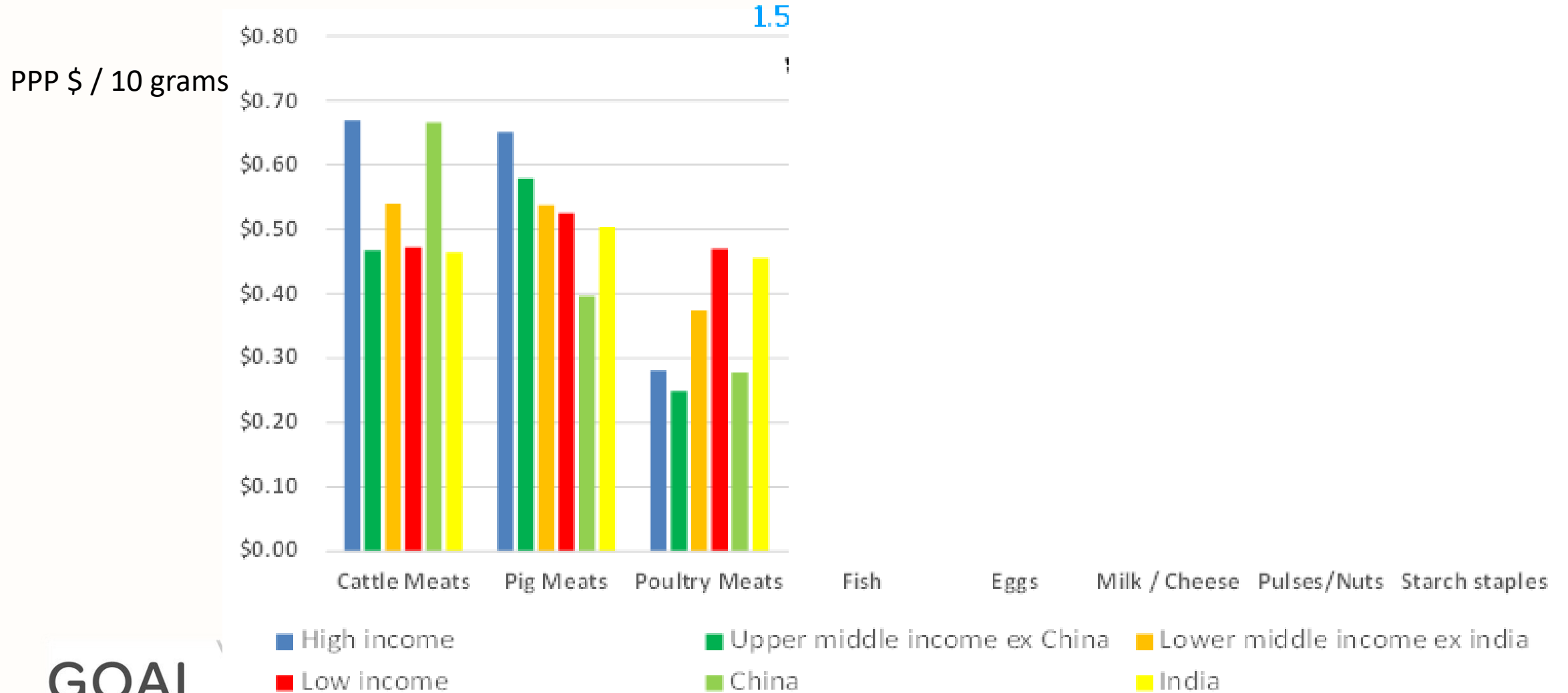
Kosten für Protein nach Region und Art



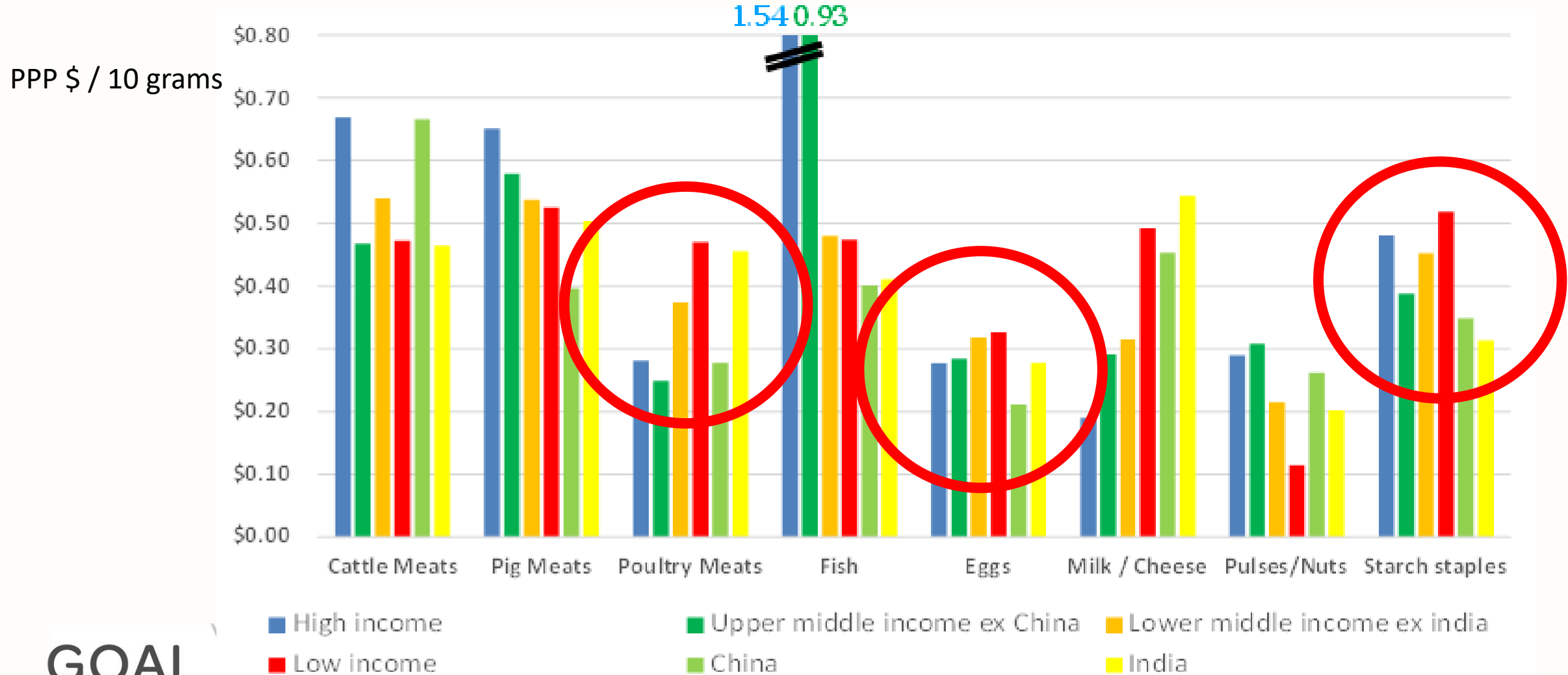
Kosten für Protein nach Region und Art



Kosten für Protein nach Region und Art



Entscheidend ist die Bioverfügbarkeit



Milch und Fleisch sind essentielle Nährstoffe



ESC

European Society of Cardiology

European Heart Journal (2023) 00, 1–20
<https://doi.org/10.1093/eurheartj/ehad269>

CLINICAL RESEARCH

Epidemiology, prevention, and health care policies

Diet, cardiovascular disease, and mortality in 80 countries

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Box The PURE Healthy Diet score translated into a healthy eating pattern

| Eat More | Amount ^{a, b} | What counts as a serving? |
|--------------------------------|--|--|
| Fruits and vegetables | 4 to 5 servings <i>daily</i> | 1 medium apple, banana, pear; 1 cup leafy vegs; 1/2 cup other vegs |
| Legumes | 3 to 4 servings <i>weekly</i> | 1/2 cup beans or lentils |
| Nuts | 7 servings <i>weekly</i> | 1 oz., tree nuts or peanuts |
| Fish | 2 to 3 servings <i>weekly</i> | 3 oz. cooked (palm of cards size) |
| Dairy | 14 servings <i>weekly</i> | 1 cup milk or yogurt; 1 1/2 oz cheese |
| Whole grains | Moderate amounts (e.g. 1 serving <i>daily</i>) can be part of a healthy diet | 1 slice (40 g) bread; 1/2 medium (40 g) flat bread; 1/2 cup (75–120 g) cooked rice, barley, buckwheat, semolina, polenta, bulgur or quinoa |
| Unprocessed meats ^c | Moderate amounts (e.g. 1 serving <i>daily</i>) can be part of a healthy diet | 3 oz. cooked red meat or poultry |

^aAmounts shown are based on intakes among people in the upper quintile category of the PURE Healthy Diet score (i.e. a diet score of 5 or higher).

^bMedian daily intake values of food components in the overall PURE cohort are: Fruit, 145 g; vegetables, 250 g; legumes, 38 g; nuts, 9 g; fish, 12 g; dairy, 113 g; whole grains, 35 g; and unprocessed red meat or poultry, 58 g.

^cWhen red meat or whole grains are included in the diet score in a sensitivity analysis, the findings were similar (neither stronger nor weaker) (**Appendix 9**), indicating that a moderate amount of whole grains or unprocessed meats can be part of a healthy diet. To this end, a healthy diet can be achieved in a number of ways which does not necessarily require either including or excluding any specific food category.

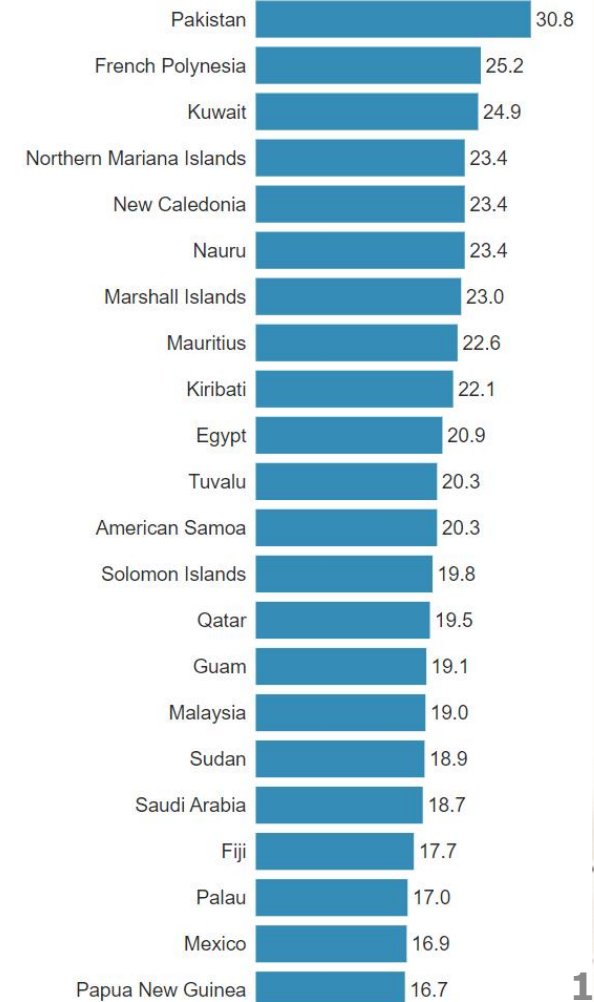


Höchste Diabetesraten der Welt in Pakistan und Ägypten

PLANET V 2.0/World Map/World/Age-Adjusted Diabetes Prevalence (%)/All biomass/2020

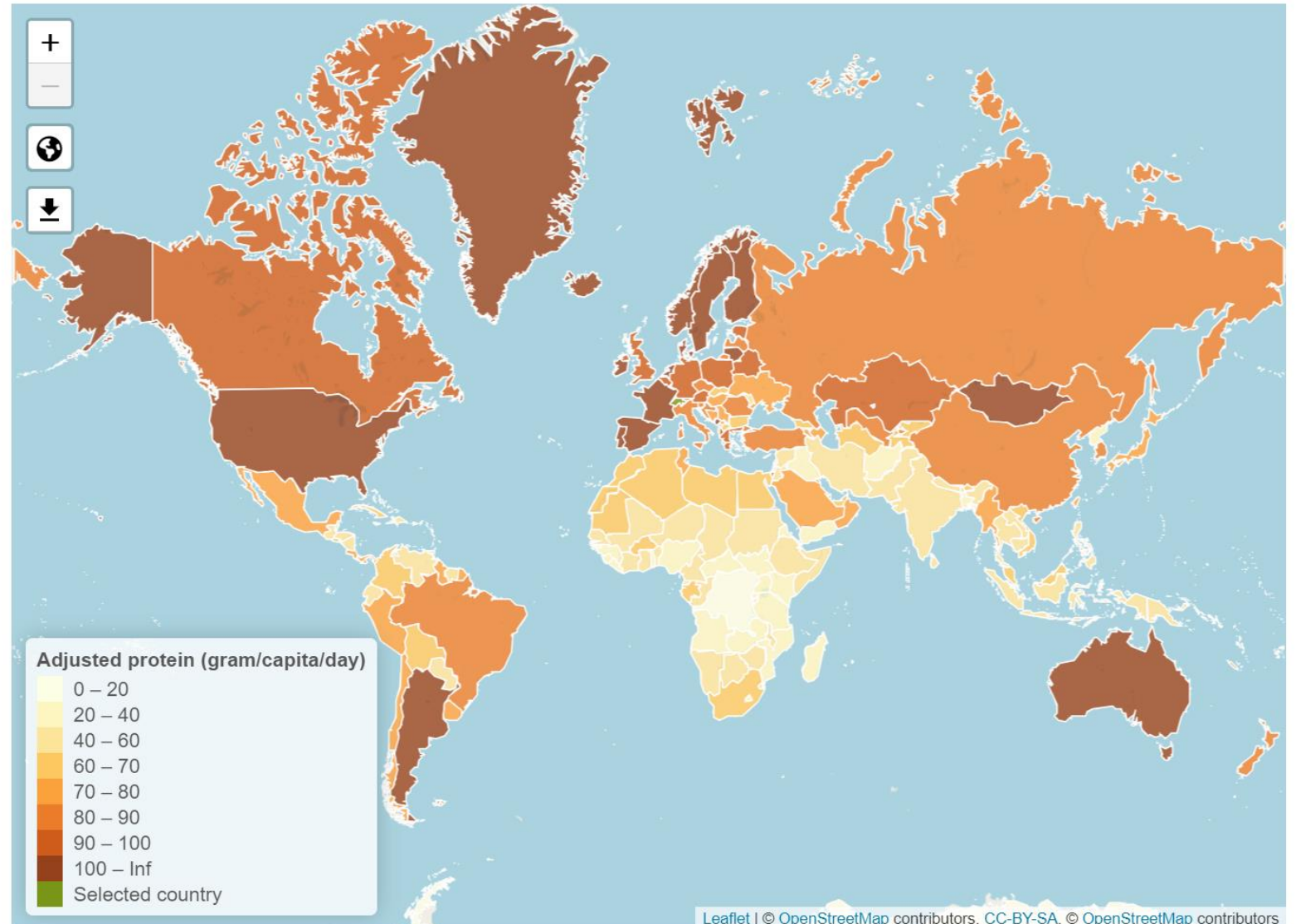


Age-Adjusted Diabetes Prevalence (%):



GOALSciences.org – bioverfügbare Proteine

PLANET V 2.0/World Map/Switzerland/Adjusted protein (gram/capita/day)/All biomass/2020

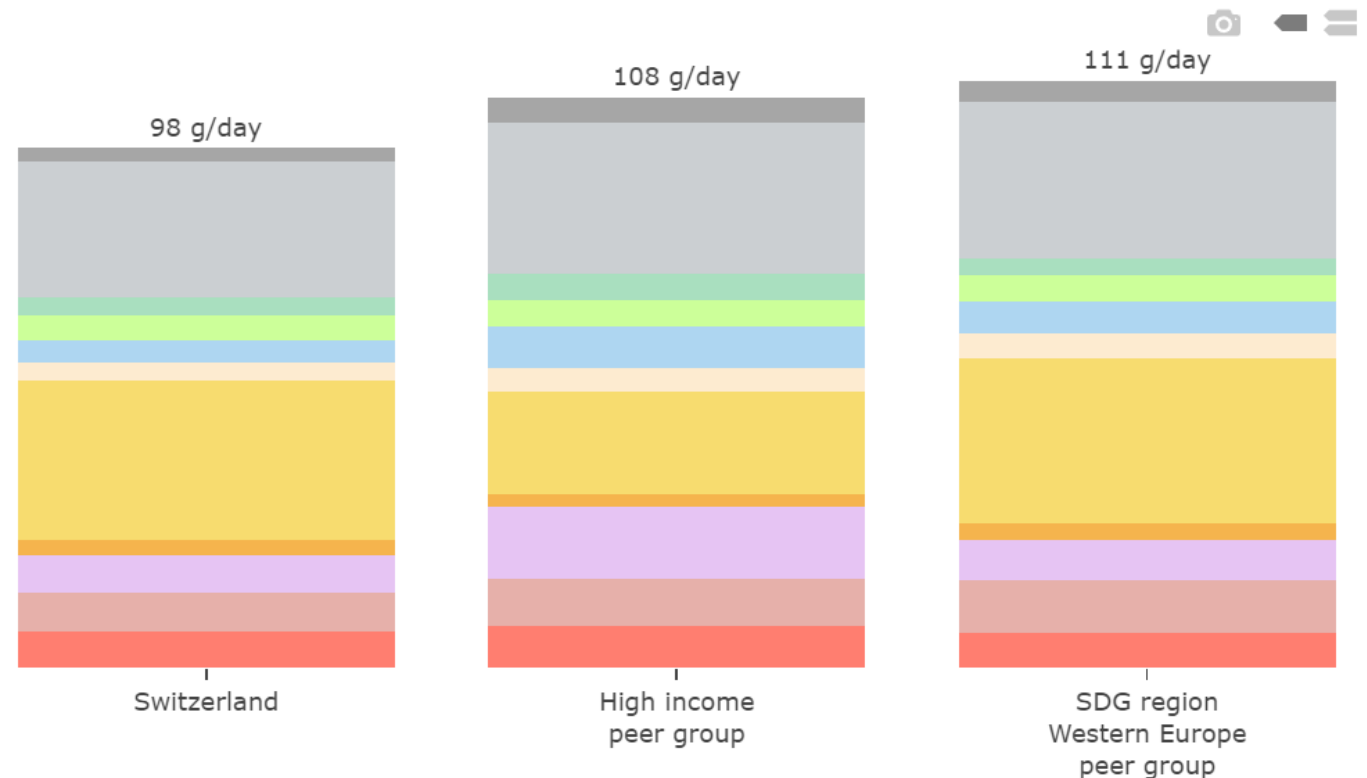


GOALSciences.org – Schweizer Proteine

Protein Composition in g/day per person, food available as per FAO, Switzerland 2020

Products:

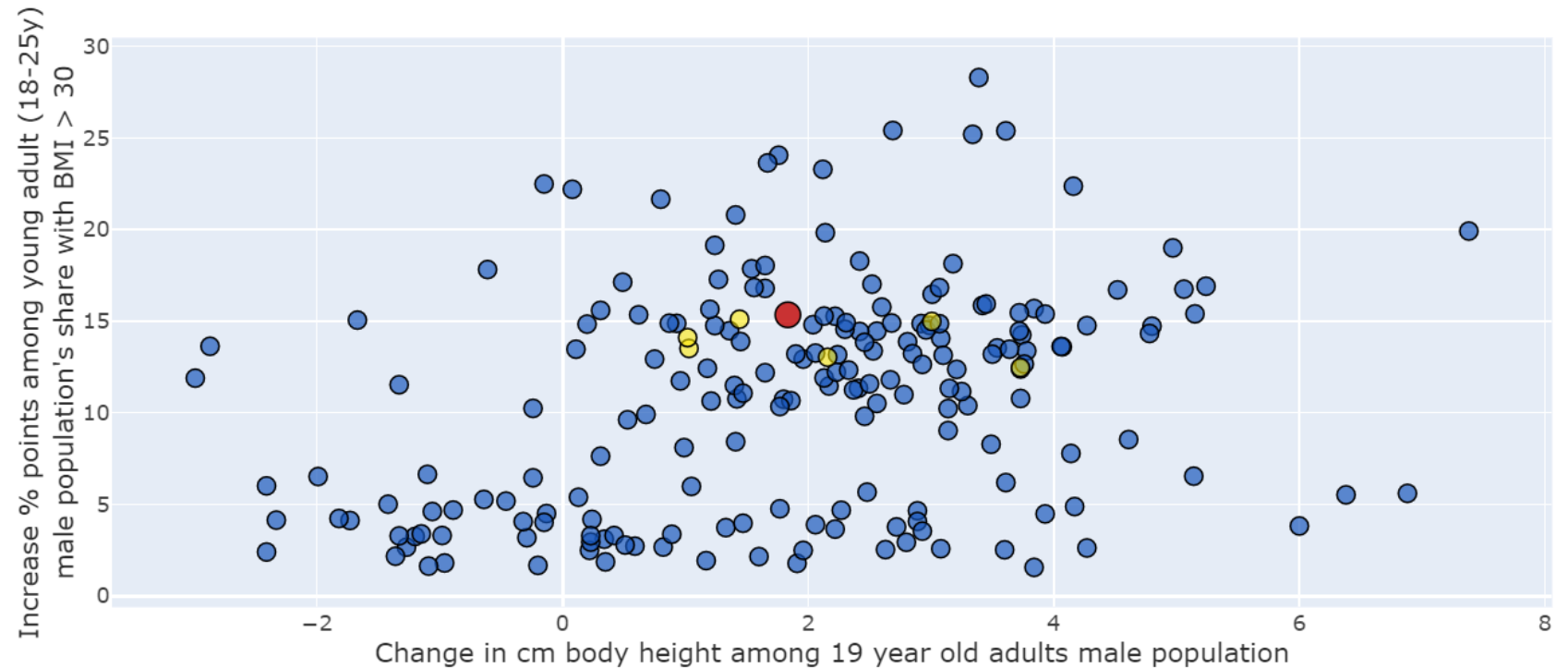
- Other
- Starchy staples
- Pulses and nuts
- Fruits and Vegetables
- Fish
- Chicken eggs
- Milk and cheese
- Other Meat and Offals
- Poultry meat
- Pork meat
- Beef meat



Source: GOALSciences calculations based on FAOStat Food Balance Sheets.

GOALSciences.org – Swiss Health

Development of male body height and BMI (1985-2016), Switzerland



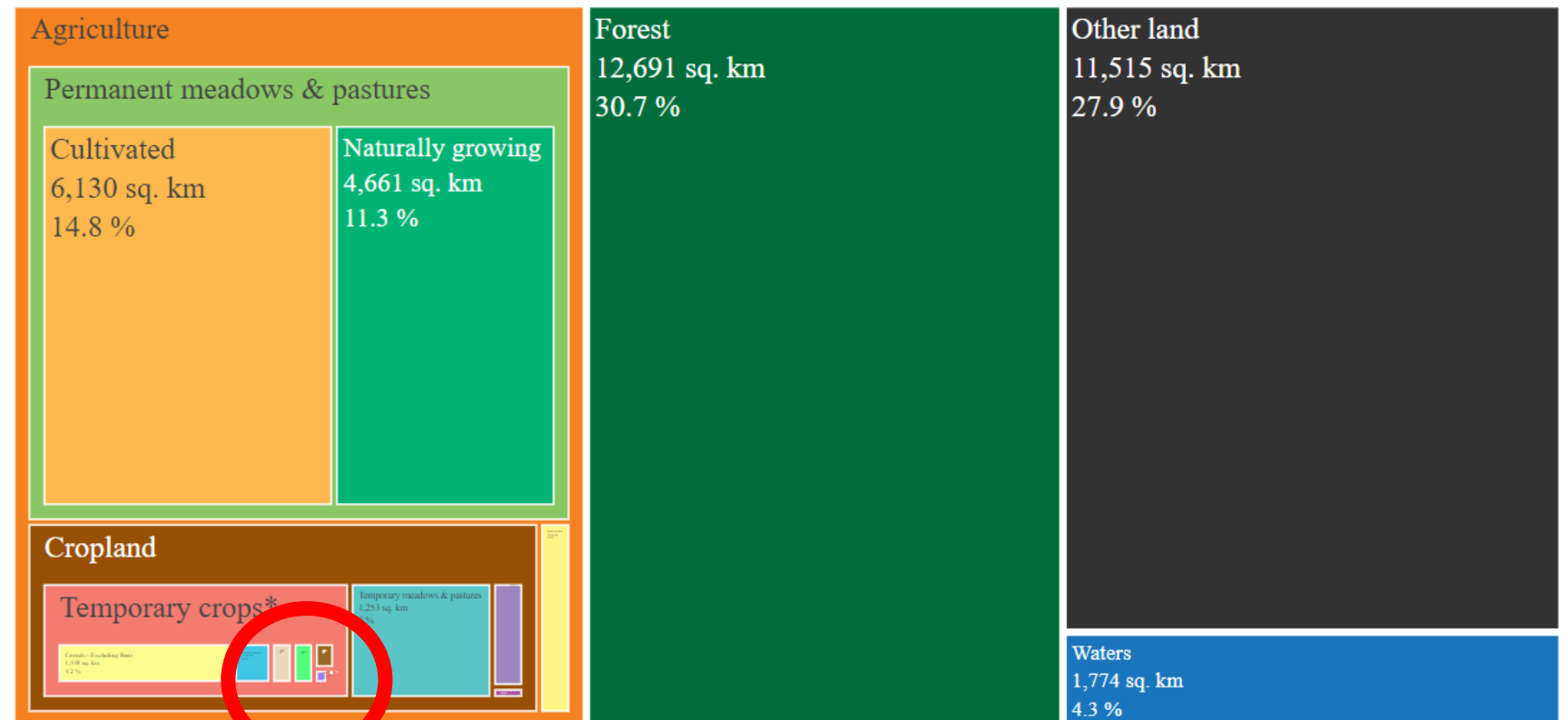
- All countries
- SDG Subregion Western Europe
- Switzerland

Source: GOALSciences calculations based on NCD RisC Lancet 2017.

GOALSciences.org – Schweizer Böden

PLANET V 2.0/Resource Utilization/Land/Switzerland/2020

Total area



GOAL
Sciences



GOALSciences.org – Schweizer Boden

PLANET V 2.0/Resource Utilization/Land/Switzerland/2020

Total area

Agriculture

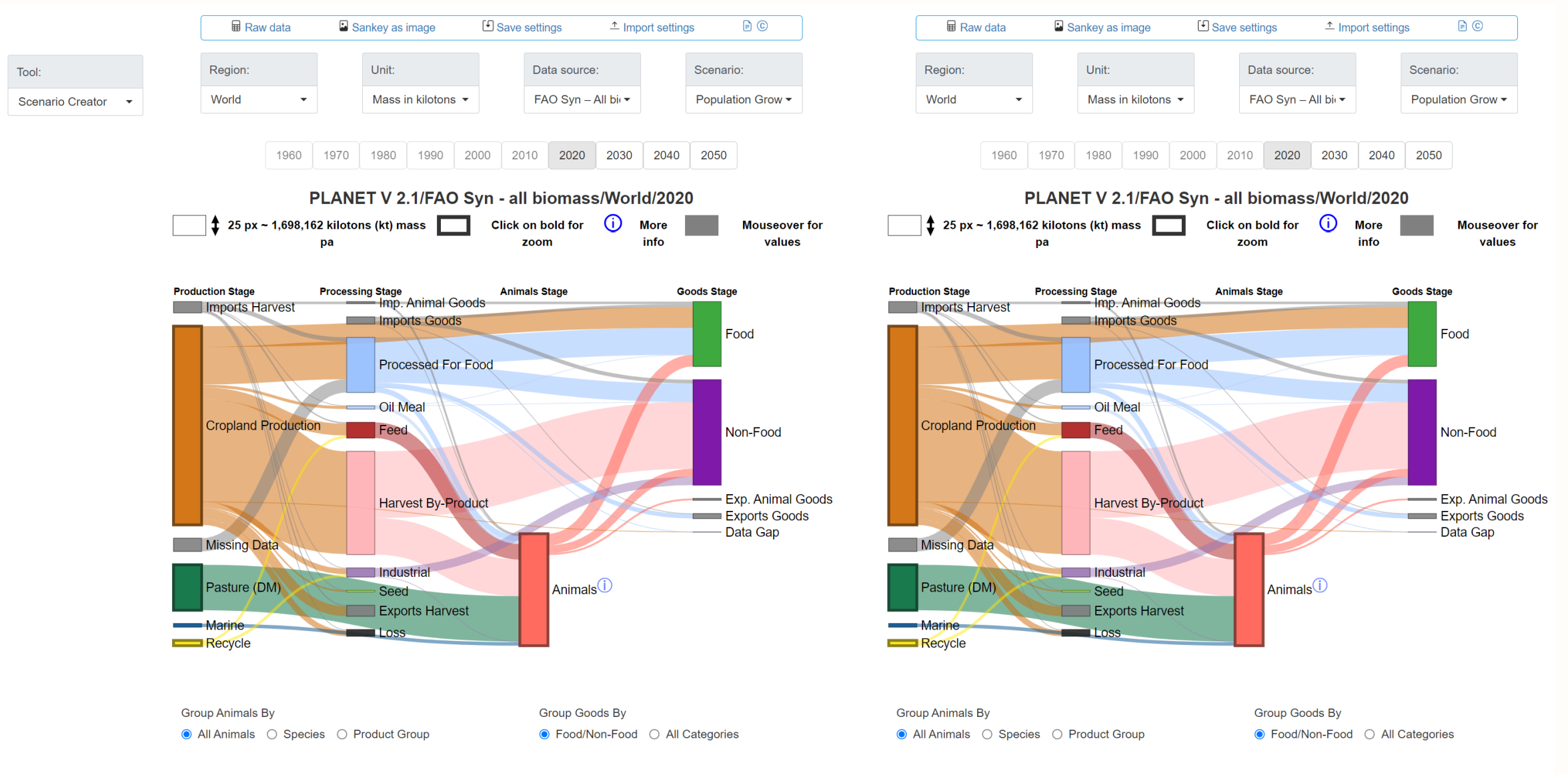
Cropland

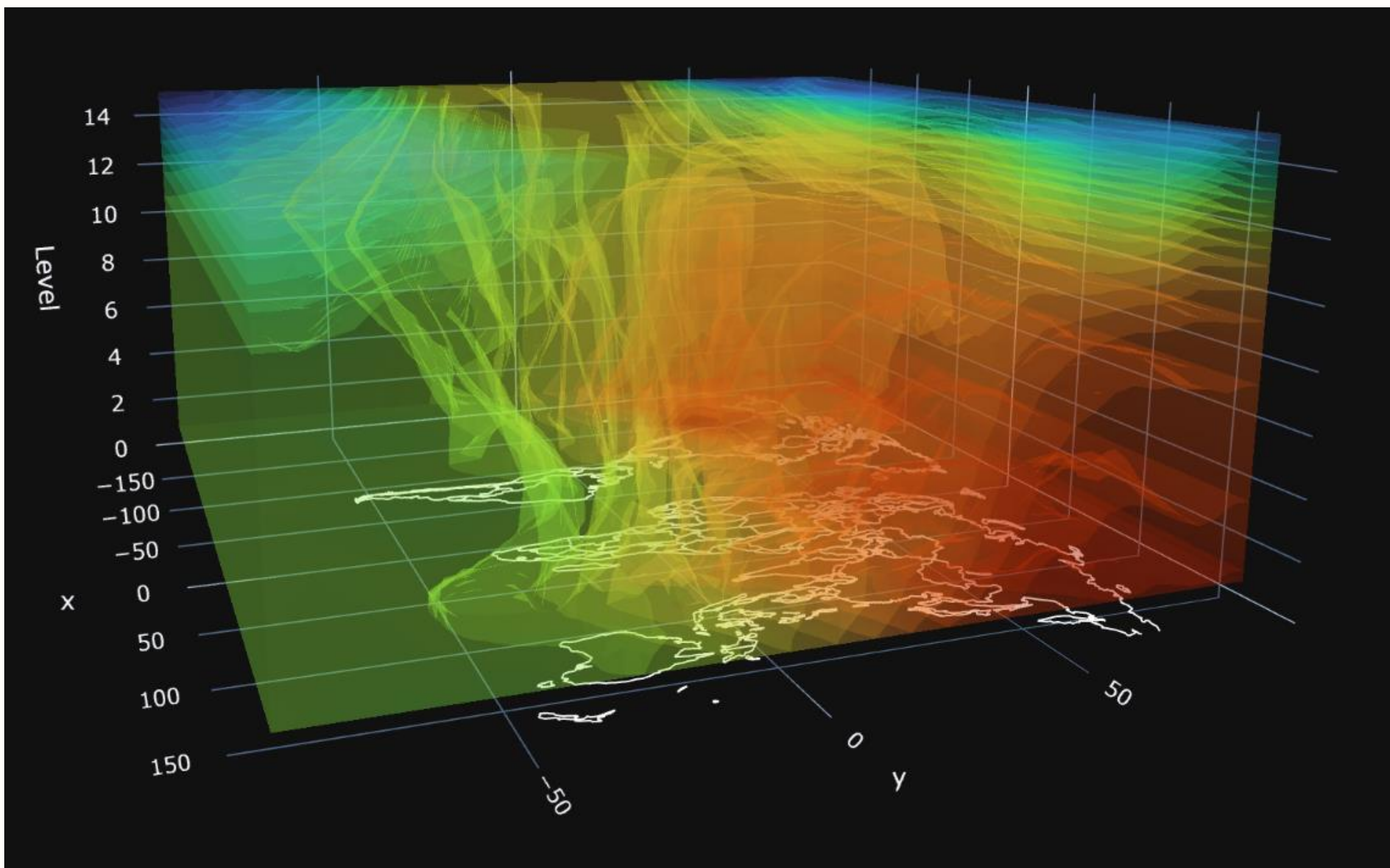
Temporary crops*

Vegetables



GOALSciences.org – Szenarien







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