

We completed this project as a component of our course, GEOG 446A - Agriculture and the Environment - with Dr. Loch Brown, professor of geography at the University of British Columbia. It was conceptualized by Dr. Tara Moreau of the UBC Botanical Gardens and carried out in conjunction with the UBC SEEDS Sustainability Program, with the intention to be used as an outreach tool for visitors of the botanical garden, with an overarching goal to contribute to sustainability initiatives on campus.

The topic we took on was protein consumption and its effect on global biodiversity. We thought this would be an important topic as the world's population is growing rapidly and in order to maintain food security - while at the same time not totally decimating biodiversity - we must find practical and sustainable solutions.

We have researched, analyzed and unpacked how protein cultivation affects biodiversity, as well as other taxes it puts on valuable natural resources such as water. Our submission is intended to demonstrate the depth research we have conducted on this topic, as well as being an accessible outreach tool for use at the UBC Botanical Garden. Our intention is to make these ideas easily communicated to people of all ages and cultures, and with our "take-aways" enable folks to easily incorporate these ideas and tools into their lives, affecting the micro-geographies that lead to global change.

Our submission include:

An '**Outreach Toolkit**' that is designed to be a guide for the Botanical Garden when they are doing outreach work with visitors. We wanted to make a lasting impression on folks, so we have included a demonstration of how to sprout lentils and encourage those facilitating the outreach to have a before and after sample of sprouted lentils and to walk visitors through the process. We have also included physical take aways; 3.5" x 2" (or business card size) hand-outs that contain a step-by-step guide of how to sprout at home and a recipe card that include sprouted food. With the hand out we suggest that a plastic screen (very inexpensive) be included so folks can start sprouting at home right away (all they need is a jar!). We believe that experiential learning leaves the most lasting impression, and if visitors are given a memorable experience - as well as the tools - they are more likely to change their behavior.

An **infograph** that clearly, and in an accessible way, outlines and compares biodiversity and protein consumption. It begins by laying out what is threatening biodiversity, then moves on to how we get our protein; comparing plant and meat protein. It also compares the amount of water, land use (area), and fossil fuels used to produce plant versus animal protein. We arrive on the conclusion that there is less of an impact on biodiversity with plant based protein cultivation and encourage folks to make a difference by consuming more plant based proteins.

Two **case studies** assessing the effects of livestock and pulse production on biodiversity. Intended to be a part of the educational outreach package.

An **annotated bibliography** which demonstrates our breadth of research with an explanation of how and why these sources were significant. It is also a springboard for further research and can be used as reference in the outreach work.