WELCOME TO

# Relatório WWF 2020

ON:

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SECTION ONE

# Introduction

SECTION ONE

Our food systems need to deliver healthy, safe, and affordable diets for everyone, everywhere and at all times, but currently they are not doing so.

Currently, our food production and dietary choices are impacting our health and our environment in downward and interlinked spirals of increasing malnutrition, diet-related and foodborne diseases, biodiversity loss, climate change and destruction of ecosystems.

AS THIS REPORT SO CLEARLY SHOWS: WHAT FOOD WE PRODUCE MATTERS, HOW WE PRODUCE IT MATTERS, AND WHAT WE EAT MATTERS.

# We can turn around the lose-lose into a win-win.

DIETARY CHANGE IS A CENTRAL COMPONENT OF A FOOD SYSTEM TRANSFORMATION AND CAN ACCELERATE OTHER KEY ACTIONS SUCH AS REDUCING FOOD LOSS AND WASTE AND ADOPTING NATUREPOSITIVE PRODUCTION PRACTICES.

Numerous recent studies have shown that a global shift toward healthier, more sustainable diets will combat climate change, improve human health and food security, reduce biodiversity loss, save lives, decrease the risks of future pandemics, and unlock economic benefits.

Governments have a central role to reshape food systems by conducting an orchestra of multiple players that need to play the same tune.

This report is relevant, timely and extremely useful as it demonstrates the health and environmental impacts of our current consumption patterns by geography and it shows the potential of dietary shifts towards planet-based diets in a very concrete way for countries.

## THE PLANT-BASED DIETS

### DIETARY PATTERNS ASSESSED

**Current diet** – the average diet currently consumed by the citizens of a country.

**National dietary guidelines** – dietary guidelines put forward by the relevant government department of each country.

**Flexitarian** – plant-based but allowing for moderate animal-source food consumption, including meat.[5]

**Pescatarian** – replacing meat with two-thirds fish and seafood and one-third fruit and vegetables.

**Vegetarian** – replacing meat with two-thirds legumes and one-third fruit and vegetables.

**Vegan** – replacing all animal-source foods with two-thirds legumes and one-third fruit and vegetables.

### TAKEAWAY:

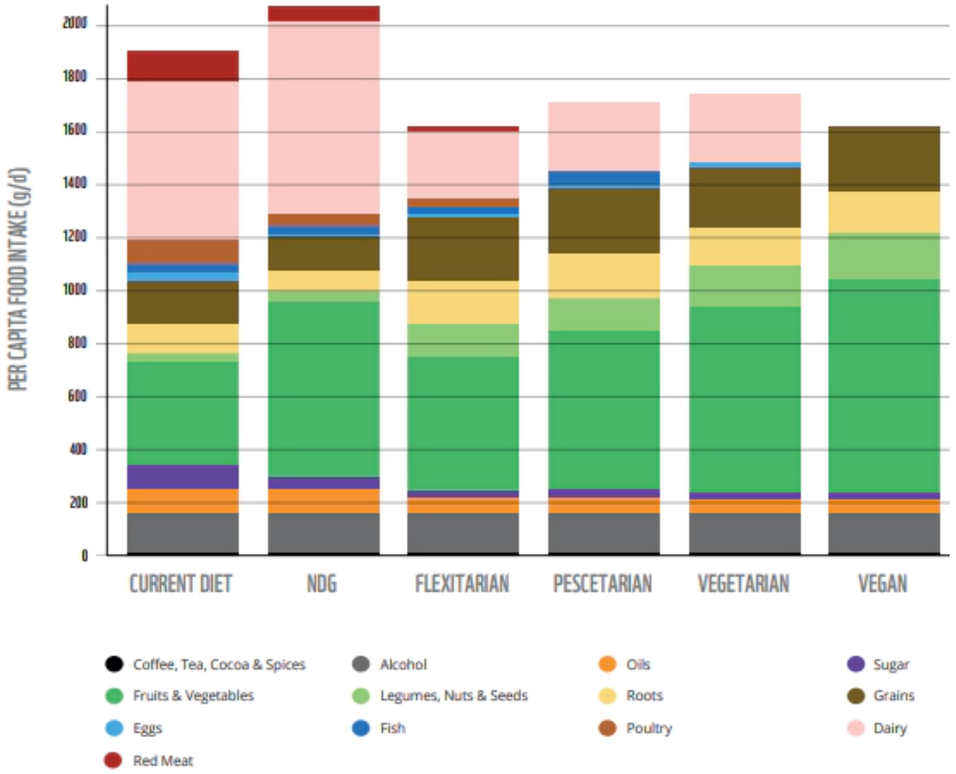
Eating a planet-based diet improves health outcomes in all countries, including reductions in premature mortality. Some countries would see their largest health gains from reductions in overall daily food intake and increased consumption of plant foods. Other countries would see the largest health gains from increased total daily food intake and adopting a more balanced diet. These results again highlight the significant inequalities that exist in our current food system. What these country-level results fail to show, however, are the inequalities that exist within countries and communities, with vulnerable groups being the most affected.[3]

# CURRENT PER CAPITA FOOD CONSUMPTION PATTERNS BY REGION AND THE FOOD INTAKE (G/DAY) REQUIRED TO SHIFT TOWARD NDGS AND OTHER DIETARY PATTERNS.



**FIGURE 7**

Current per capita food consumption patterns in the **United States** and the food intake (g/day) required to shift toward NDGs and other dietary patterns.

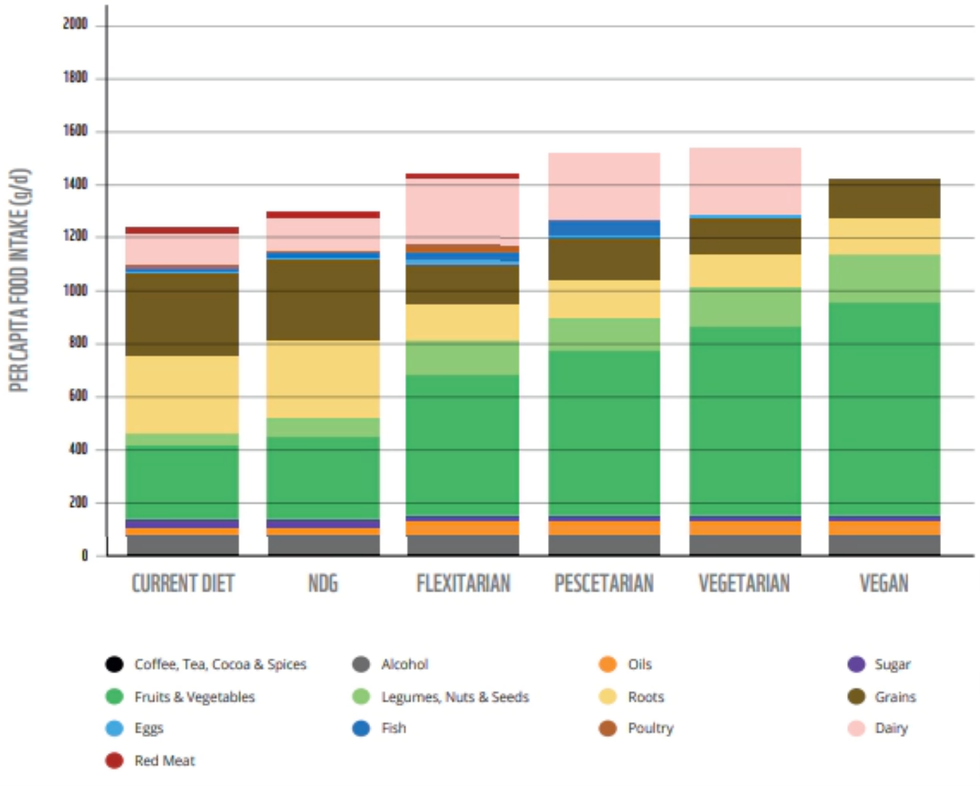



OUR DIETARY CHOICES ARE DRIVING A SYSTEM OF FOOD



**FIGURE 6**

Current per capita food consumption patterns in **Africa** and the food intake (g/day) required to shift toward NDGs and other dietary patterns.




NDG's: NATIONAL DIETARY GUIDELINES

# It must be local.

Dietary shifts can only be achieved through local action, but there has not been clarity around how countries existing in different contexts can make these shifts.

The global imperative must be translated into national and sub-national contexts, by understanding the impacts of shifting consumption patterns, on both human and environmental health. There is no one-size-fits-all solution and we need flexible, adaptable models which can be tailored to different cultures, but consistently deliver high human health benefits and low environmental impacts: Planet-based diets.

The evidence in this report shows there is an opportunity to improve human and environmental health by making dietary shifts that eliminate over-consumption of any foods, and that doing so can help us achieve the Sustainable Development Goals and the Paris Agreement.

**FIGURE 9**

Percentage reduction in premature mortality in **Germany** from a shift toward NDGs and other dietary patterns.

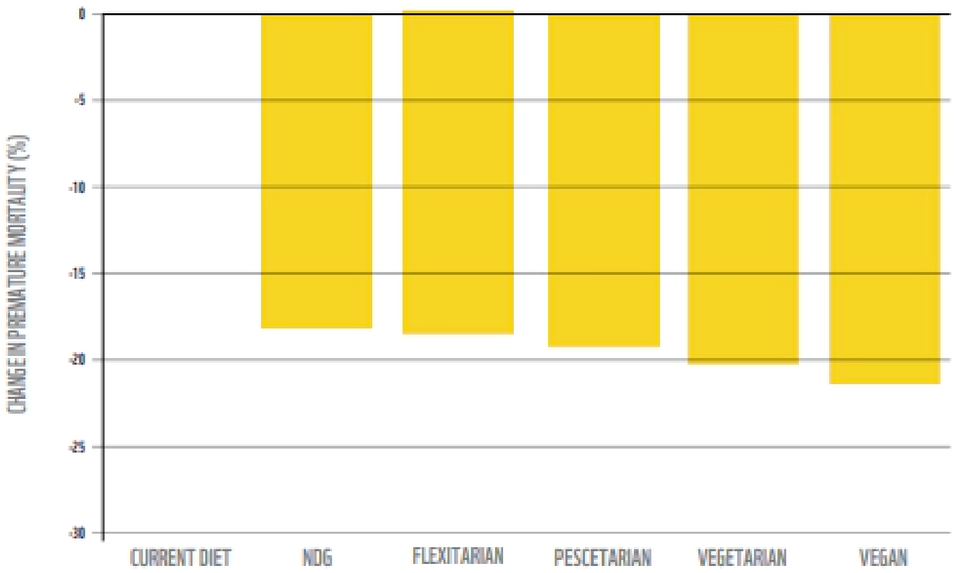





**FIGURE 10**

Percentage reduction in premature mortality in **Argentina** from a shift toward NDGs and other dietary patterns.


# HEALTH IMPACT OF DIETS

Several recent studies have demonstrated the significant impact that increasing consumption of plant-based foods relative to animal-source foods can have on human health.

WE FRAME THE ANALYSIS AROUND FIVE STRATEGIC ACTIONS THAT CAN BE STRONGLY INFLUENCED BY DIETARY SHIFTS AND ARE NEEDED TO BEND THE CURVE ON THE NEGATIVE IMPACTS OF THE FOOD SYSTEM, MOVING FROM ONE THAT EXPLOITS THE PLANET TO ONE THAT RESTORES IT FOR NATURE AND PEOPLE.

1 

**Reversing biodiversity loss** – rapidly slow down and move toward zero loss of biodiversity from food production while also using agricultural systems to restore biodiversity across the planet.

2 


**Living within the global carbon budget for food** – reduce total greenhouse gas emissions from food production to at most 5 Gt $CO_2$-eq, the maximum allowable total global emissions (or carbon budget) from producing our food.

3 

**Feeding humanity on existing cropland** – stop expansion of new cropland, or any agricultural land, at the expense of natural habitats, supplying future food demand on the same area of land as today (or ideally less).

4 

**Achieving negative emissions** – move agriculture from a carbon source to a carbon sink, including by freeing up existing agricultural lands that can be reforested or restored and rapidly implementing food production practices that increase carbon storage on existing cropland.

5 

**Optimizing crop yields** – use all agricultural lands to their maximum potential including optimizing crop yields through better food production practices that more efficiently use water and fertilizers, preserve ecosystem functions and contribute to resilient landscapes.

BELOW WE DISCUSS FIVE STRATEGIC ACTIONS THAT TOGETHER CAN HELP TO BEND THE CURVE ON THE NEGATIVE IMPACTS OF THE FOOD SYSTEM, MOVING FROM ONE WHICH EXPLOITS NATURE TO ONE THAT RESTORES IT.

SECTION ONE

# Strategic action 1

SECTION ONE

## 1. REVERSING BIODIVERSITY LOSS

- "**Rapdly slow down abd move toward zero loss of biodiversity from food production while also using agricultural systems to restore biodiversity across the planet**";

- Agricultural biodiversity is **essential** to resilient food systems;
  - Of the 6,000 plant species that have been cultivated for food production, fewer than 200 are consumed today and just 9 account for nearly 70% of all food produced
  - Many underused plant species has potential for adapting food production to climate change

- **Habitat loss and fragmentation**, particularly conversion of land for food production, is **the single greatest current driver** of biodiversity loss.

[]

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## 1. REVERSING BIODIVERSITY LOSS

- **Increasing consumption of plant-based foods** relative to animal-source foods is often cited as a method for reducing biodiversity loss, with the main driver being reduced pressure on natural ecosystems at risk of conversion
    - Dietary shifts may **not always** lead to reductions in biodiversity loss. For example, both India and Indonesia could potentially see increases in biodiversity loss with a shift to other dietary patterns. This is mainly due to recommended nutritional increases in the consumption of fruits, vegetables, dairy and oil and less driven by red meat consumption as in other countries.

- This highlights the critical importance of **combining dietary shifts with more sustainable food production practices and reduced food loss and waste.**

## 1. REVERSING BIODIVERSITY LOSS

- **International trade** has also been promoted as a crucial means of achieving food security by **increasing the availability and stability of the food supply** at affordable prices

- At the global scale, dietary shifts are needed to reduce the dramatic decline in species.

- At the national scale, **shifting toward healthier** diets or increasing total caloric intake to tackle undernutrition **without also reducing food loss and waste or improving food production practices** could result in an **increase in biodiversity loss** in particular countries.
  - These losses appear to be most dramatic in tropical countries, which are both the most biodiversity-rich countries on the planet and those most likely to suffer from undernutrition.

SECTION ONE

# Strategic action 2

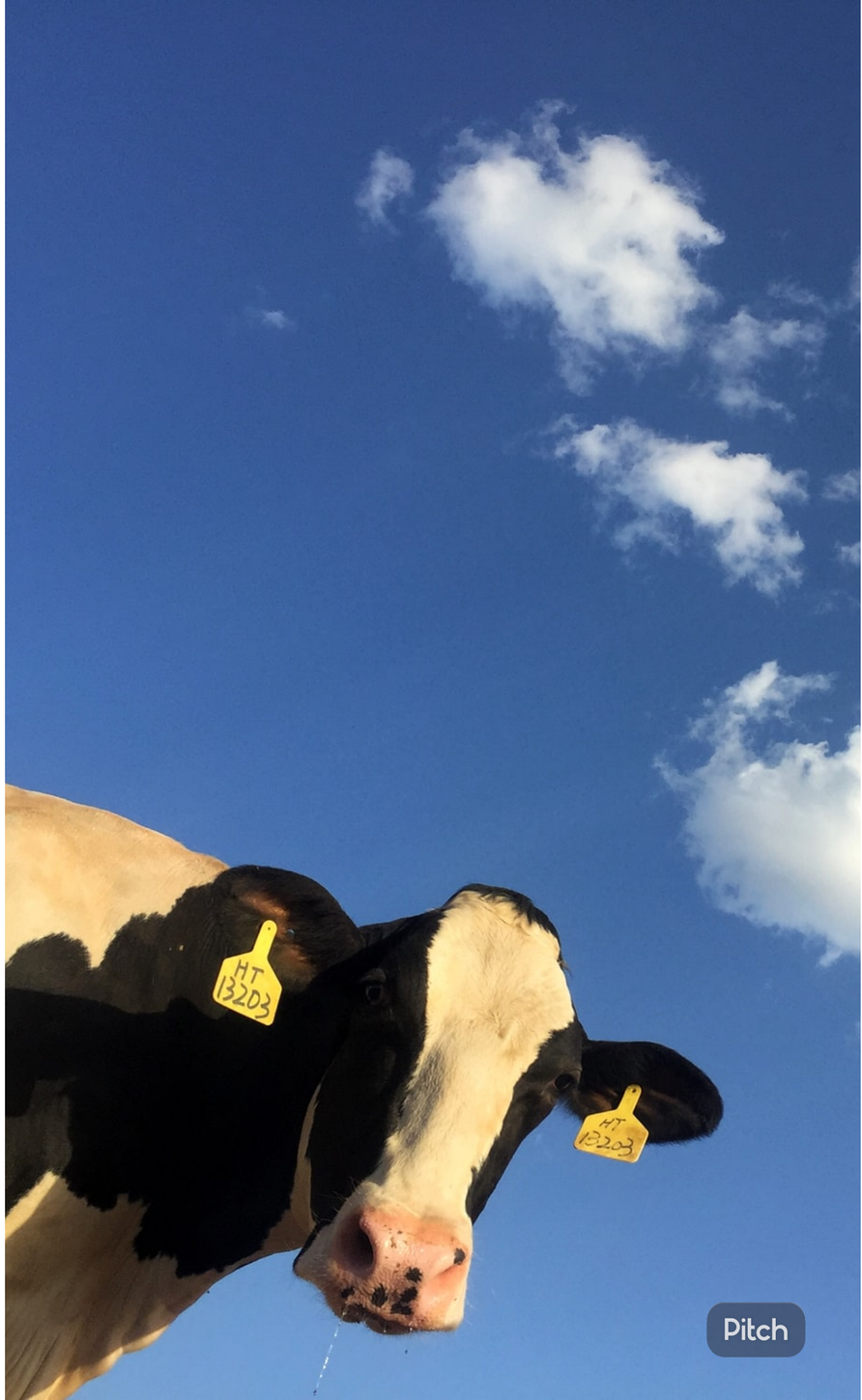
SECTION ONE

## 2. LIVING WITHIN THE GLOBAL CARBON BUDGET FOR FOOD

- **"Reduce total greenhouse gas emissions from food production to at most 5 Gt CO2-eq, the maximum allowable total global emissions (or carbon budget) from producing our food.**

- "**About two-thirds of all food-related** GHG (14 Gt de 52 Gt)) emissions are accounted for in the **agriculture, forestry and land use sector** (AFOLU), while the remaining third comes from processing, transport and packaging"

- Some **GHG emissions will always be generated** because of biological processes that are intrinsic to crop and livestock production - . To reflect this, it sets a planetary boundary for food production emissions



## 2. LIVING WITHIN THE GLOBAL CARBON BUDGET FOR FOOD

- **Only the shifting diets would not be enough** to reduce the GHG emissions. Any remaining emissions above this planetary boundary after dietary shifts would **need to be mitigated through a combination of changes** in food production practices and reductions in food loss and waste.

- Most of the emissions reductions from shifting diets come from **reductions in red meat and dairy consumption.** Red meat and dairy currently account for just over half of total global food-related GHG emissions (7.4Gt of 14.3Gt). Radical shifts in diets would reduce them to between zero and 1.9Gt globally

- To more **equally share** the global carbon budget for food will require **more ambitious dietary shifts in some countries compared to others.**

## 2. LIVING WITHIN THE GLOBAL CARBON BUDGET FOR FOOD

- "**Dilemma** in our food system: **tackling all forms of malnutrition while keeping GHG emissions within the planetary boundary for food.** Solving this dilemma requires a more **equitable distribution of the global carbon budget** for food to enable all countries to alleviate all forms of malnutrition while also tackling climate change. **Countries should raise the ambition of their NDGs** to align with international commitments such as the Paris Agreement, while ensuring that efforts to improve nutrition do not lead to the adoption of high-carbon diets."

SECTION ONE

# Strategic action 3

SECTION ONE

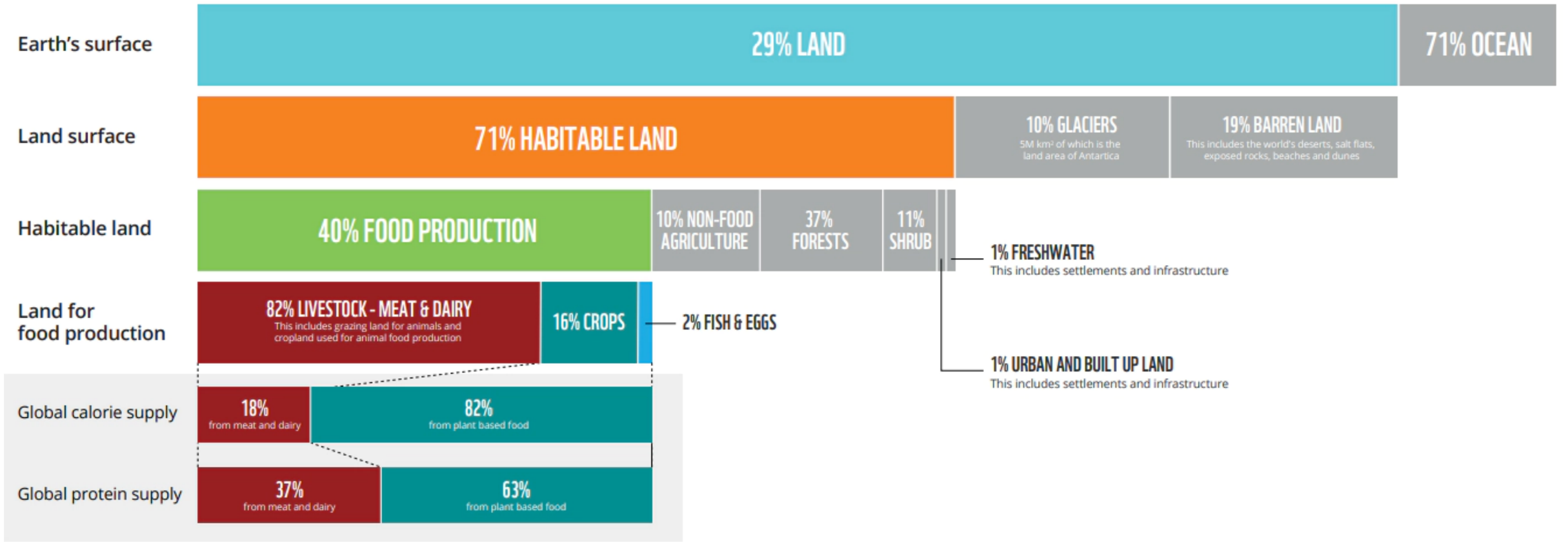
# Feeding humanity on existing cropland

THE MAIN PURPOSE OF THIS ACTION IS STOPING EXPANSION OF NEW CROPLAND, OR ANY AGRICULTURAL LAND, AT THE EXPENSE OF NATURAL HABITATS, SUPPLYING FUTURE FOOD DEMAND ON THE SAME AREA OF LAND AS TODAY.

# Total global land for food production

**FIGURE 24**

Total global land use for food production.

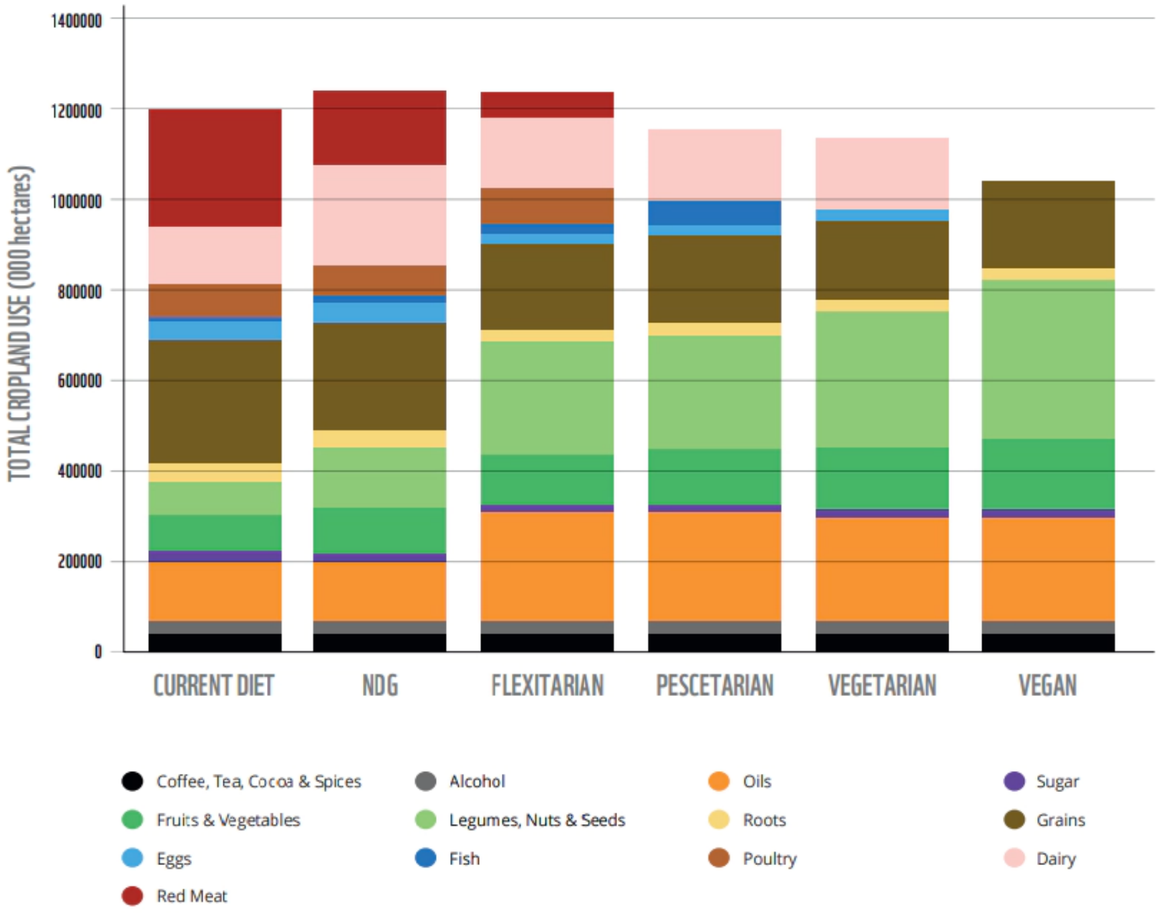



**Data source:** Analysis used for this report and complimented with data from the UN Food and Agriculture Organization (FAO)
**Figure adapted from:** OurWorldinData.org

# Total global cropland for current diets, NDGs and other dietary patterns production

**FIGURE 25**

Total **global** cropland use for current diets, NDGs and other dietary patterns.



# Total cropland use for different dietary patterns between two countries



**FIGURE 26**

Total cropland use for current diets, NDGs and other dietary patterns: **Canada.**

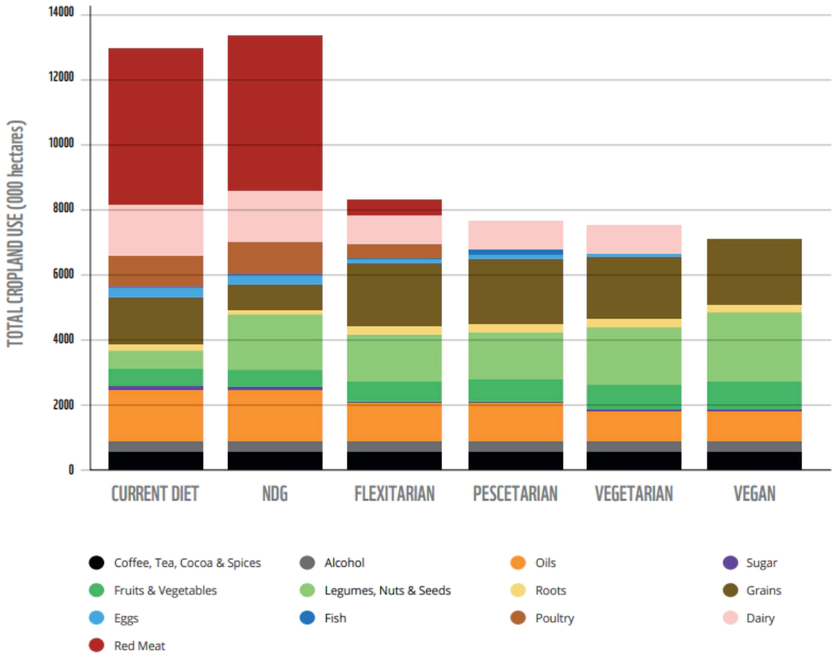
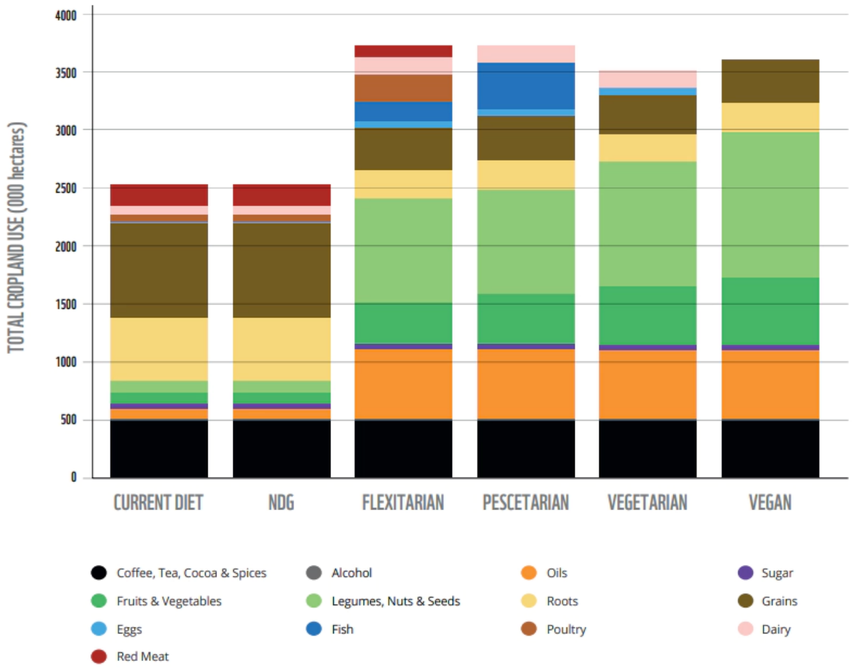





**FIGURE 27**

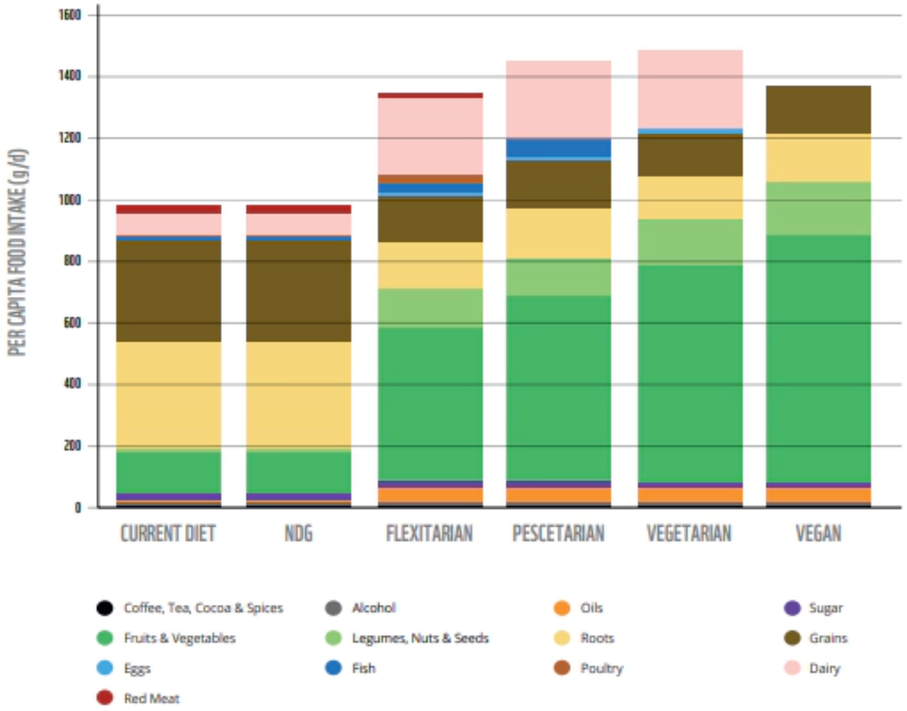
Total cropland use for current diets, NDGs and other dietary patterns: **Madagascar.**



# Madagascar current food intake for different diets

**FIGURE 28**

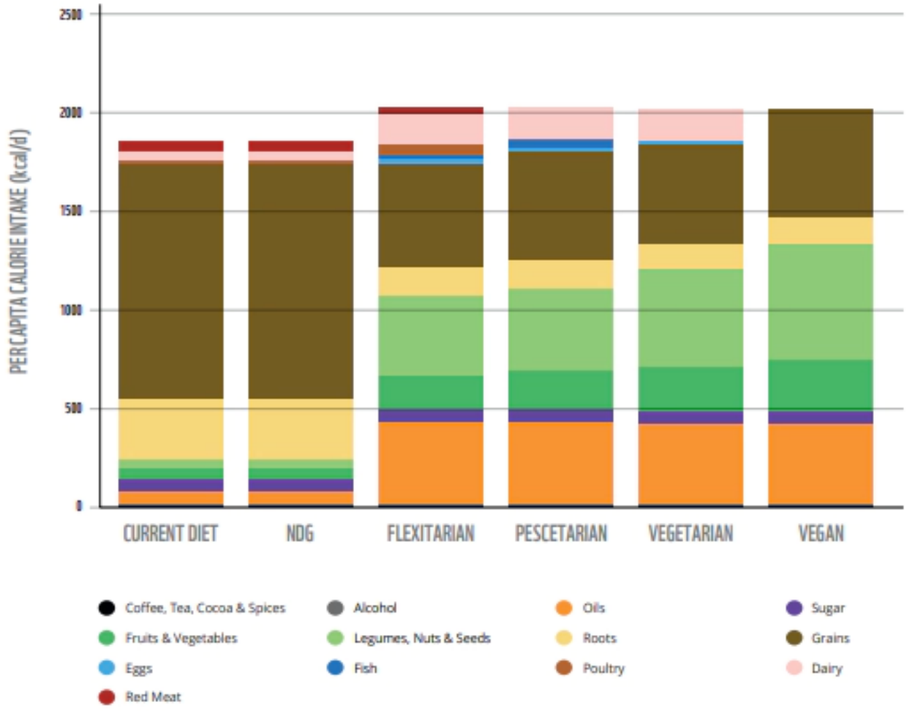
Per capita daily food intake (g/day) in **Madagascar*** for current diets, NDGs, and other dietary patterns.




** Madagascar does not report an NDG, and we therefore interpret this to mean there is no recommendation on dietary composition, so diets remain the same as the Current Diet.*

**FIGURE 29**

Per capita daily calorie intake by food group in **Madagascar*** for current diets, NDGs and other dietary patterns.




** Madagascar does not report an NDG, and we therefore interpret this to mean there is no recommendation on dietary composition, so diets remain the same as the Current Diet.*

SECTION ONE

# Strategic action 4

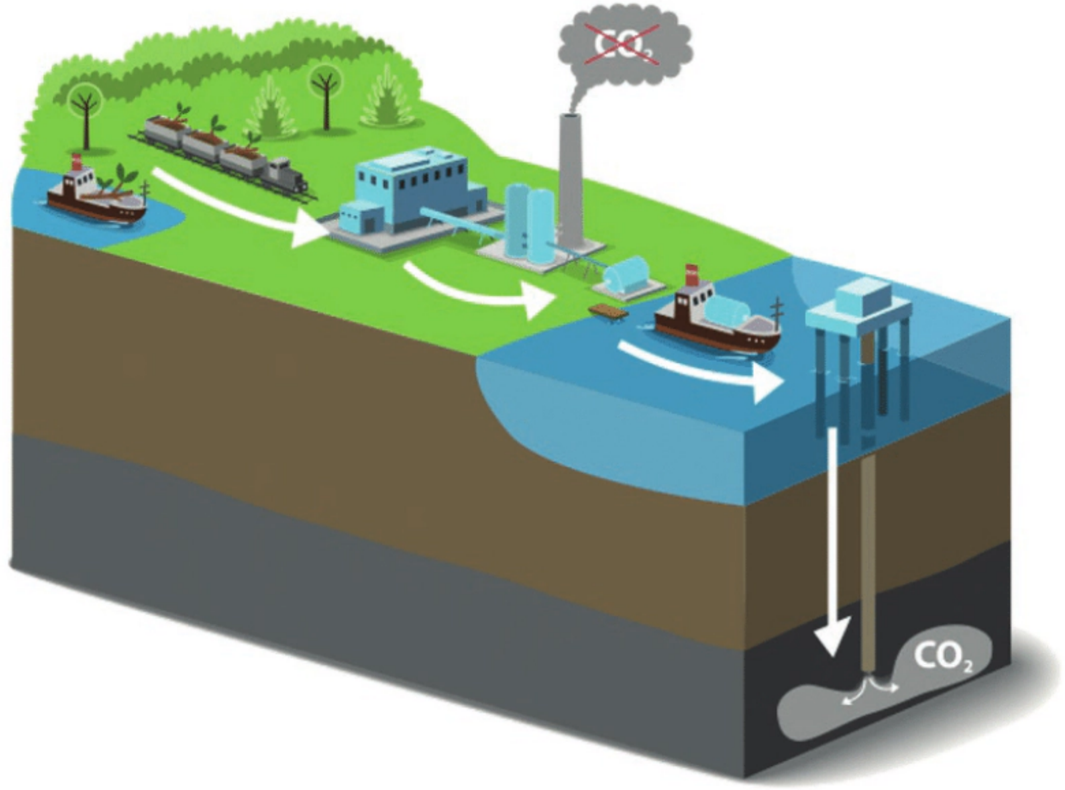
SECTION ONE

# Achieving negative emissions

THE MAIN PURPOSE OF THIS ACTION IS MOVING AGRICULTURE FROM A CARBON SOURCE TO A CARBON SINK, INCLUDING FREEING UP EXISTING AGRICULTURAL LANDS THAT CAN BE REFORESTED OR RESTORED AND RAPID IMPLEMENTATION OF FOOD PRODUCTION PRACTICES THAT INCREASE CARBON STORAGE ON AGRICULTURAL LAND.

# BECCS

(Bio-energy with carbon capture and storage)




# Tree Planting

# Dietries

Both BECCS and tree planting need area to have a impact on carbon sink. And, as seen on the third strategic action, diet change might have a huge impact on required area for food production. By reducing  land for food production those areas can be alocated for other purposes.

# Per capita carbon sequestration for different dietary patterns between two countries



**FIGURE 32**

Per capita carbon sequestration per year for current diets, NDGs and other dietary patterns: **Denmark.**

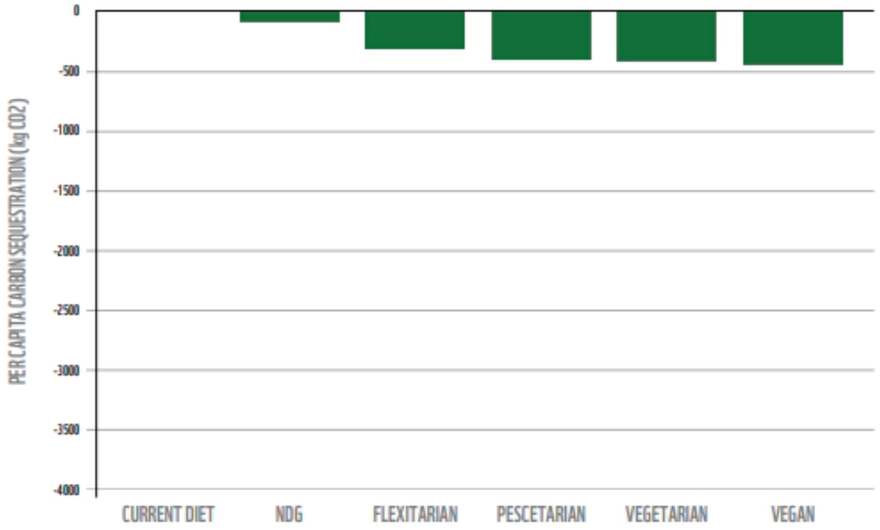
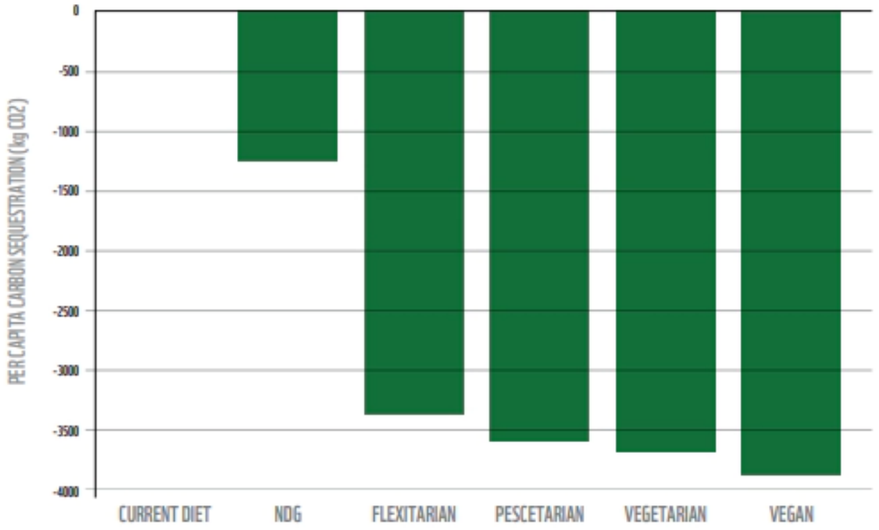





**FIGURE 33**

Per capita carbon sequestration per year for current diets, NDGs and other dietary patterns: **Brazil.**

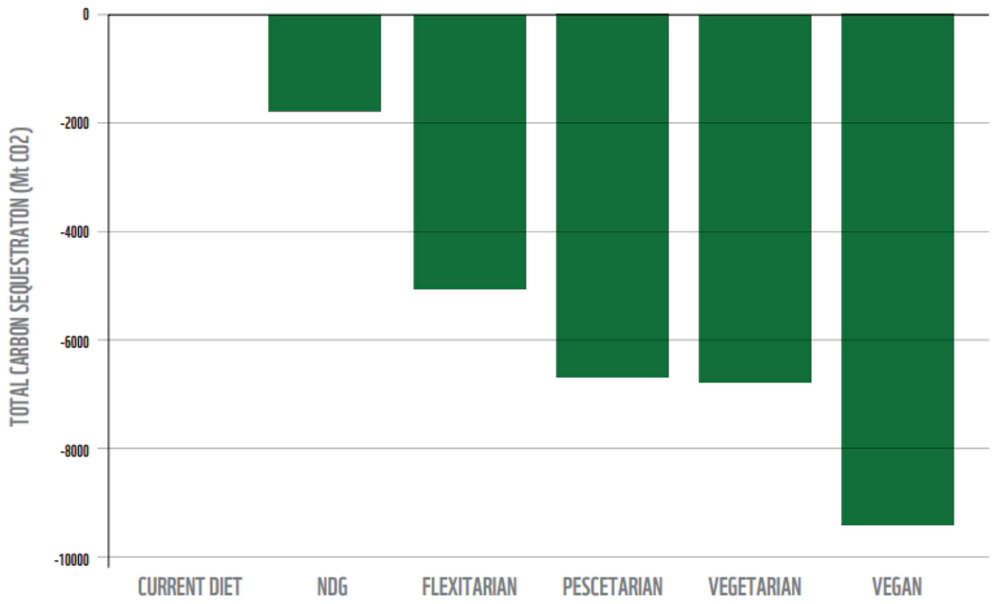


# Total global carbon sequestration per year for different diets



**FIGURE 38**

Total **global** carbon sequestration per year for current diets, NDGs and other dietary patterns.




Carbon sequestration associated with dietary shifts can play a critical role in climate mitigation globally by freing up agricultural land and allowing reversion to native ecosystems

# Considerations when looking for a land to sequester carboon

It is really important to carefully consider other ecosystem services and prevent the conversion of natural ones into forests, the result of this act would be the loss of the flora and fauna that they support.

SECTION ONE

# Strategic action 5

SECTION ONE

# Optimizing crop yiels

THE MAIN OBJECTIVE OF THIS ACTION IS TO MAXIMIZE PRODUCTION, INCLUDING BETTER USE OF WATER AND FERTILIZERS, PRESERVING THE ECOSYSTEM AND CONTRIBUTING TO A RESILIENT LANDSCAPE.

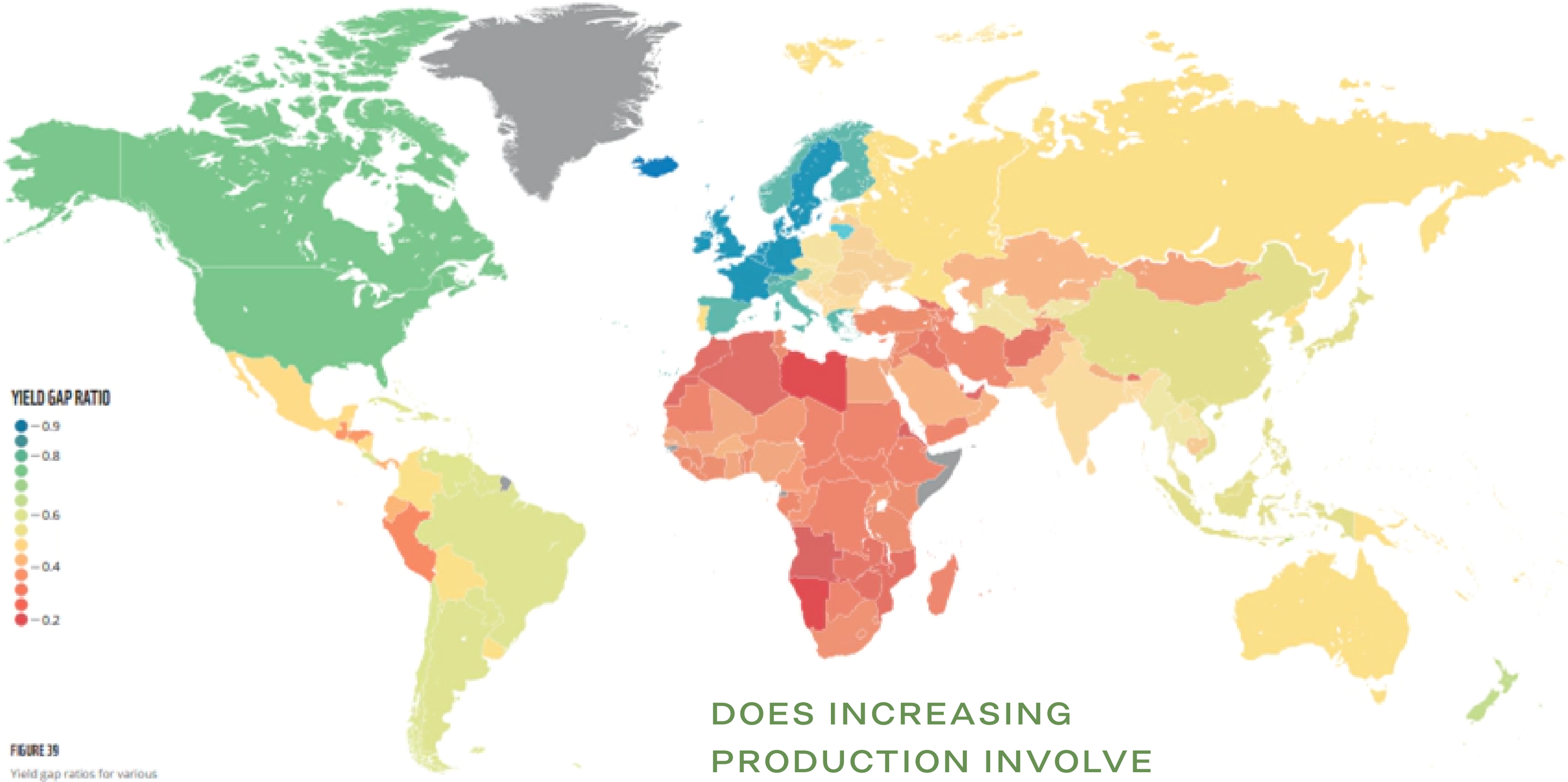
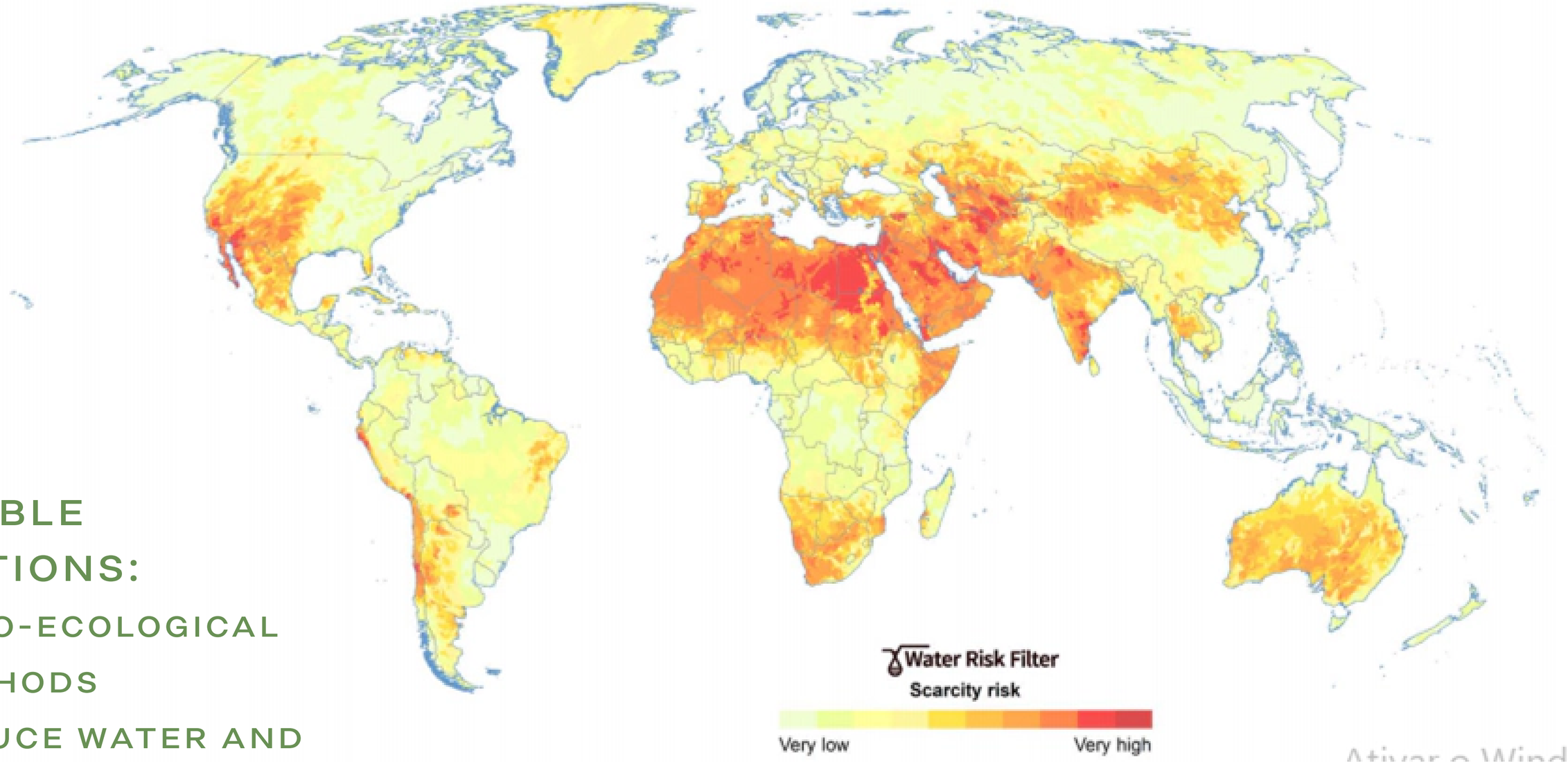



**FIGURE 39**

Yield gap ratios for various countries. Green and blue represents high yields and low yield gaps while countries in red and orange have high yield gaps.

Source: Clark et al. (2018)[6]

## DOES INCREASING PRODUCTION INVOLVE INCREASING WATER USE?




## POSSIBLE SOLUTIONS:

- AGRO-ECOLOGICAL METHODS
- REDUCE WATER AND FERTILIZER USE
- CHANGE THE DIET

# EUTROPHICATION X WATER USE



**FIGURE 41**

Total water use for current diets, NDGs and other dietary patterns: **United States.**

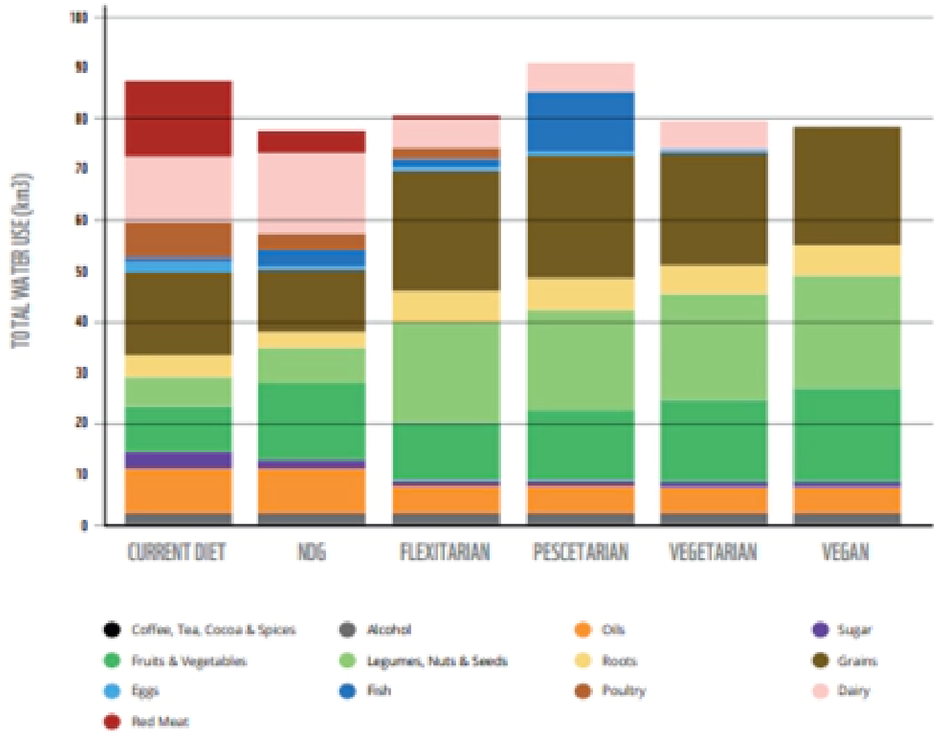
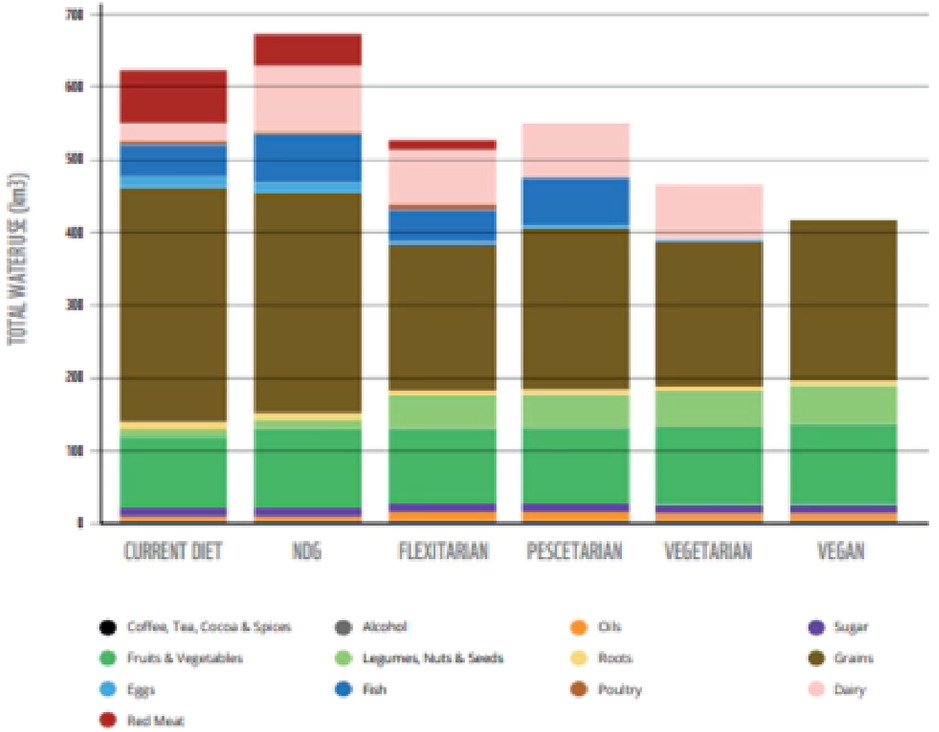





**FIGURE 42**

Total water use for current diets, NDGs and other dietary patterns: **China.**



# EUTROPHICATION X WATER USE



**FIGURE 43**

Total eutrophication potential from nitrogen and phosphorus use for current diets, NDGs and other dietary patterns: **United States.**

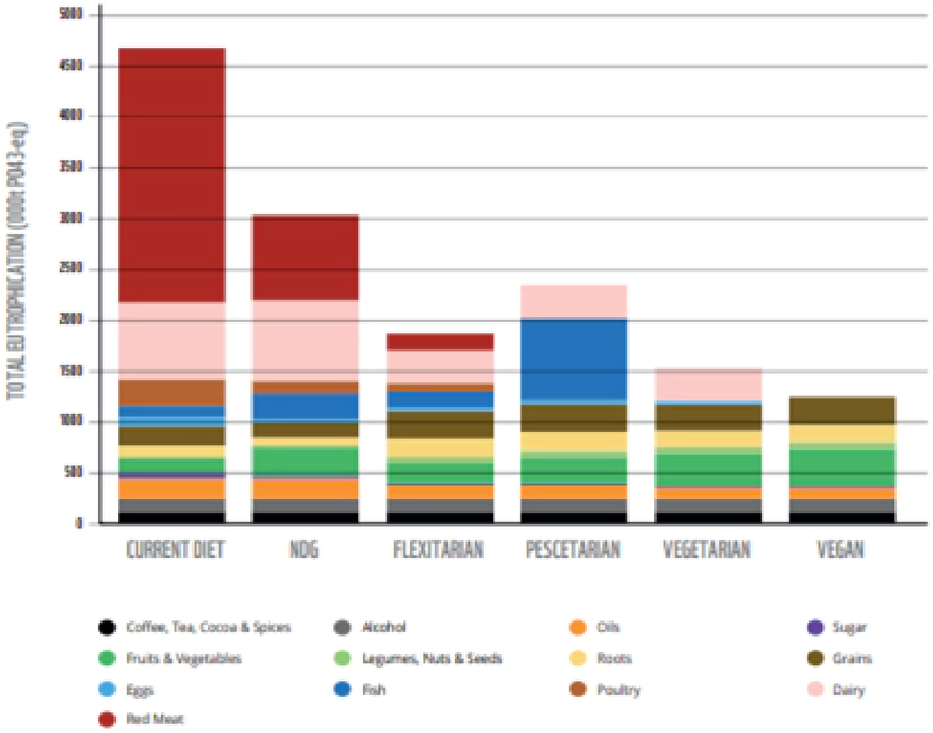
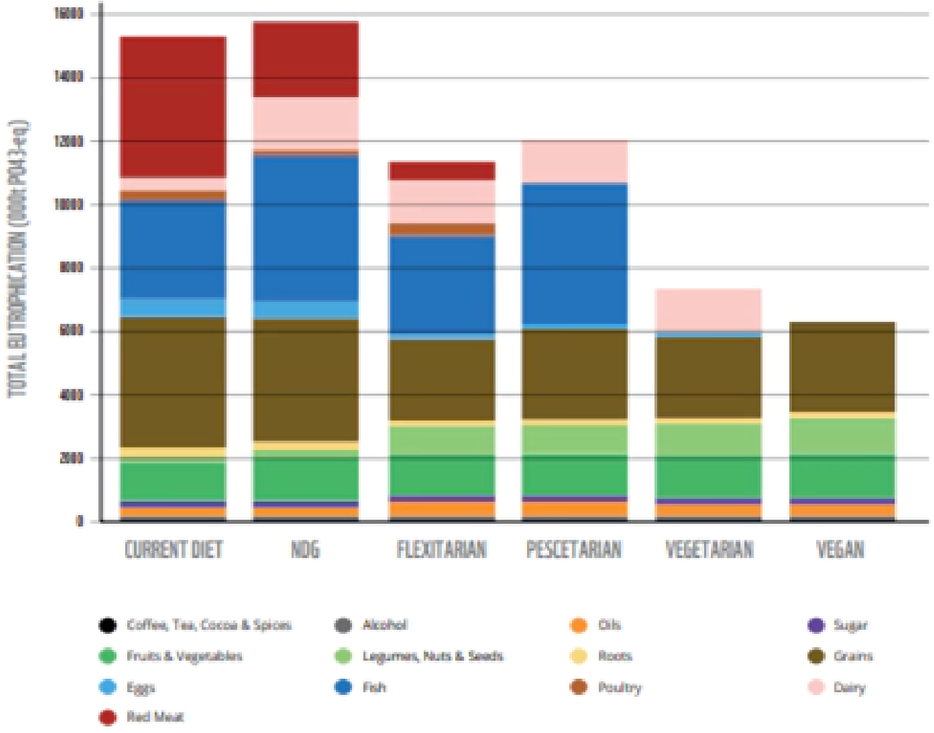





**FIGURE 44**

Total eutrophication potential from nitrogen and phosphorus use for current diets, NDGs and other dietary patterns: **China.**



# EUTROPHICATION X WATER USE

**FIGURE 45**

Total eutrophication potential from nitrogen and phosphorus use for current diets, NDGs and other dietary patterns: **Zambia.**

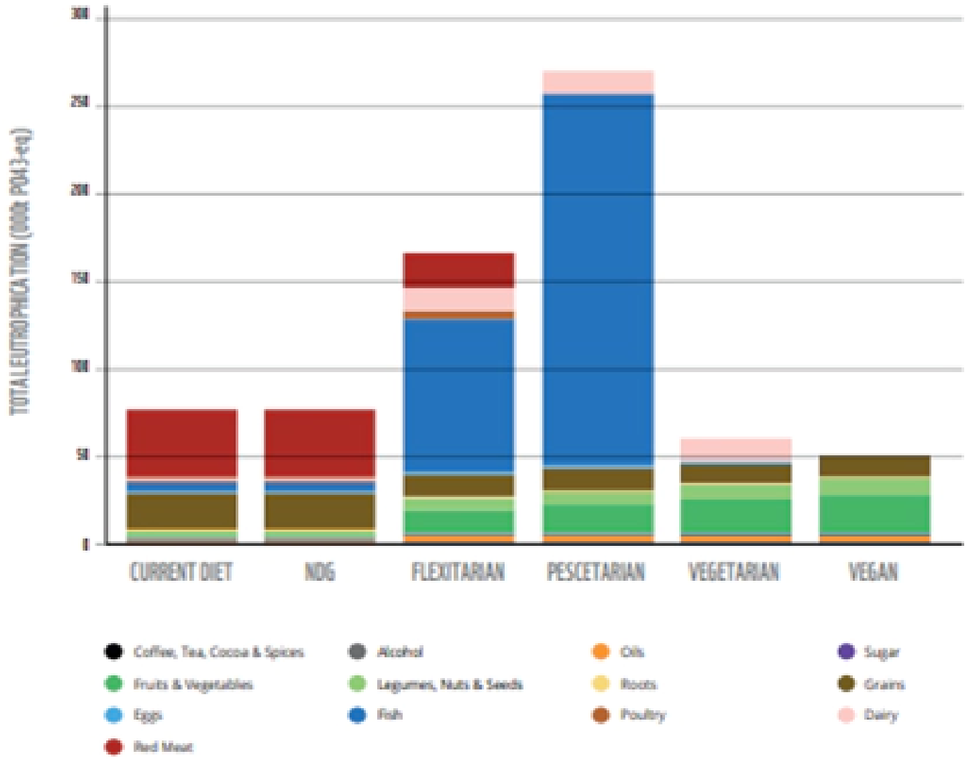
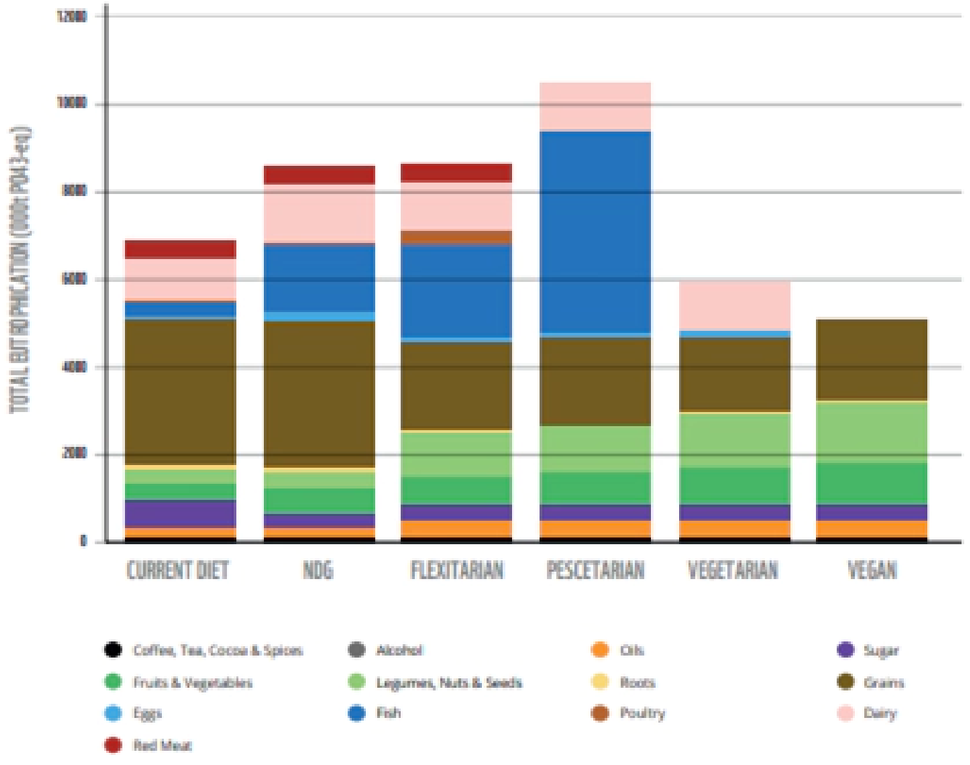





**FIGURE 46**

Total eutrophication potential from nitrogen and phosphorus use for current diets, NDGs and other dietary patterns: **India.**




# COORDINATED RESPONSE

SECTION TWO

# Conclusion

EMPLOYEE ONBOARDING

SECTION TWO

## ACTIONS

- Update NDGs
- Initiate national-level multi-stakeholder dialogues on healthy and sustainable diets
- Curate the evidence base for your country
- Facilitate international coordination of efforts
- Plant-based diets as a major opportunity for mitigating and adapting to climate change
- Establish global research coordination bodies for food systems
- Develop a framework convention on food systems

## CONCLUSION

- We were never so healthy
- The 2020 Living Planet Report underlined how humanity’s increasing destruction of nature
- Scenario is reversible
- Individual countries need understand their piece of the global jigsaw
-

SECTION FIVE

# References


SECTION FIVE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