

# A Brief Atlas of Gender and AI

Marcelo Torres Llamas | 05-06-23



# « Laboratoria »

<L>

## Our impact



**+30.000**  
women applied  
to our bootcamp



**+3,200**  
women graduated  
as Web Developers and UX-Designers



**+85%**  
of graduates  
started working at jobs in tech after  
finishing bootcamp (since 2018)



**+1,100**  
companies hired  
Laboratoria graduates



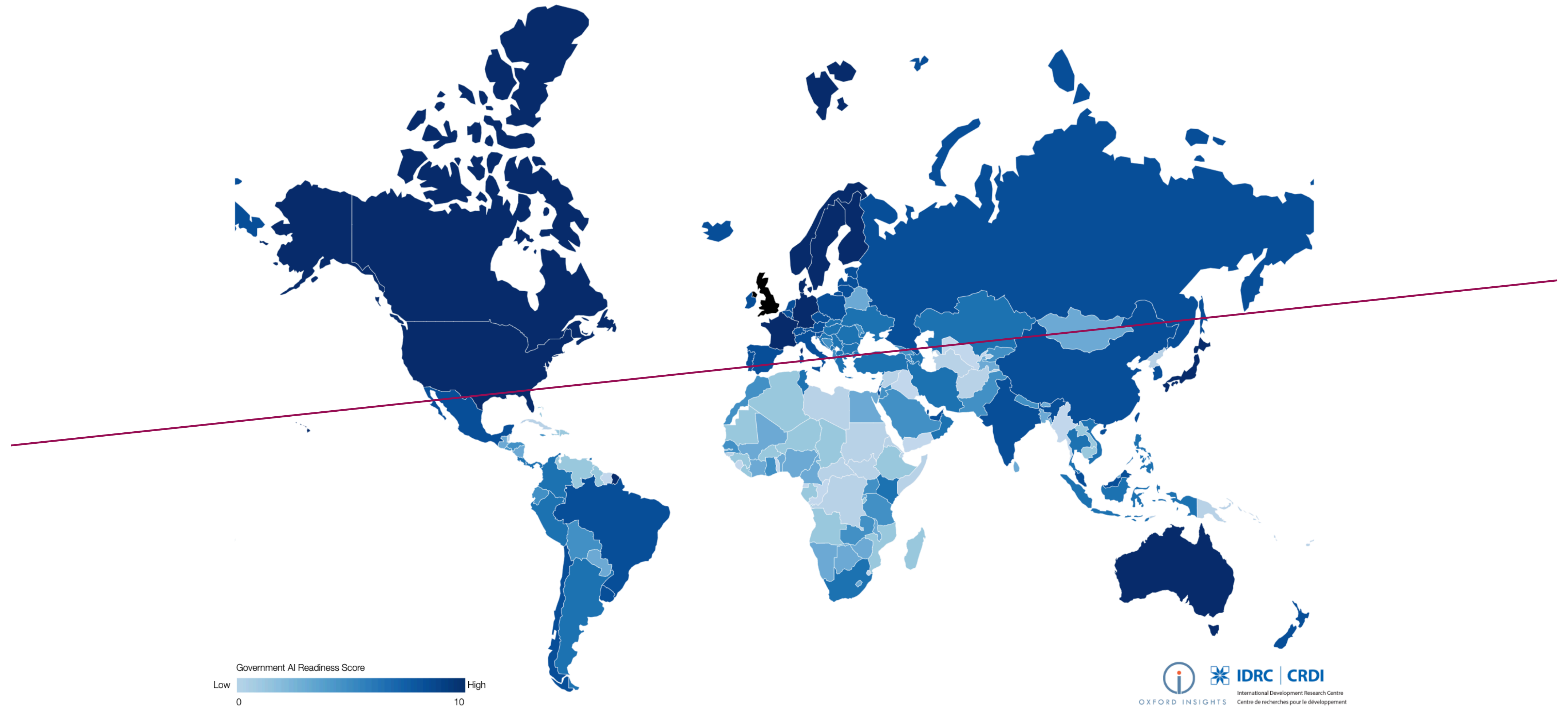
**2.7X**  
average salary  
increase post-bootcamp



**6 countries**  
we have operations in Peru, Chile,  
México, Brasil, Ecuador and Colombia,  
with an impact all over Latin America



# Oxford Government AI Readiness Score





# Women's Rights in Each Country

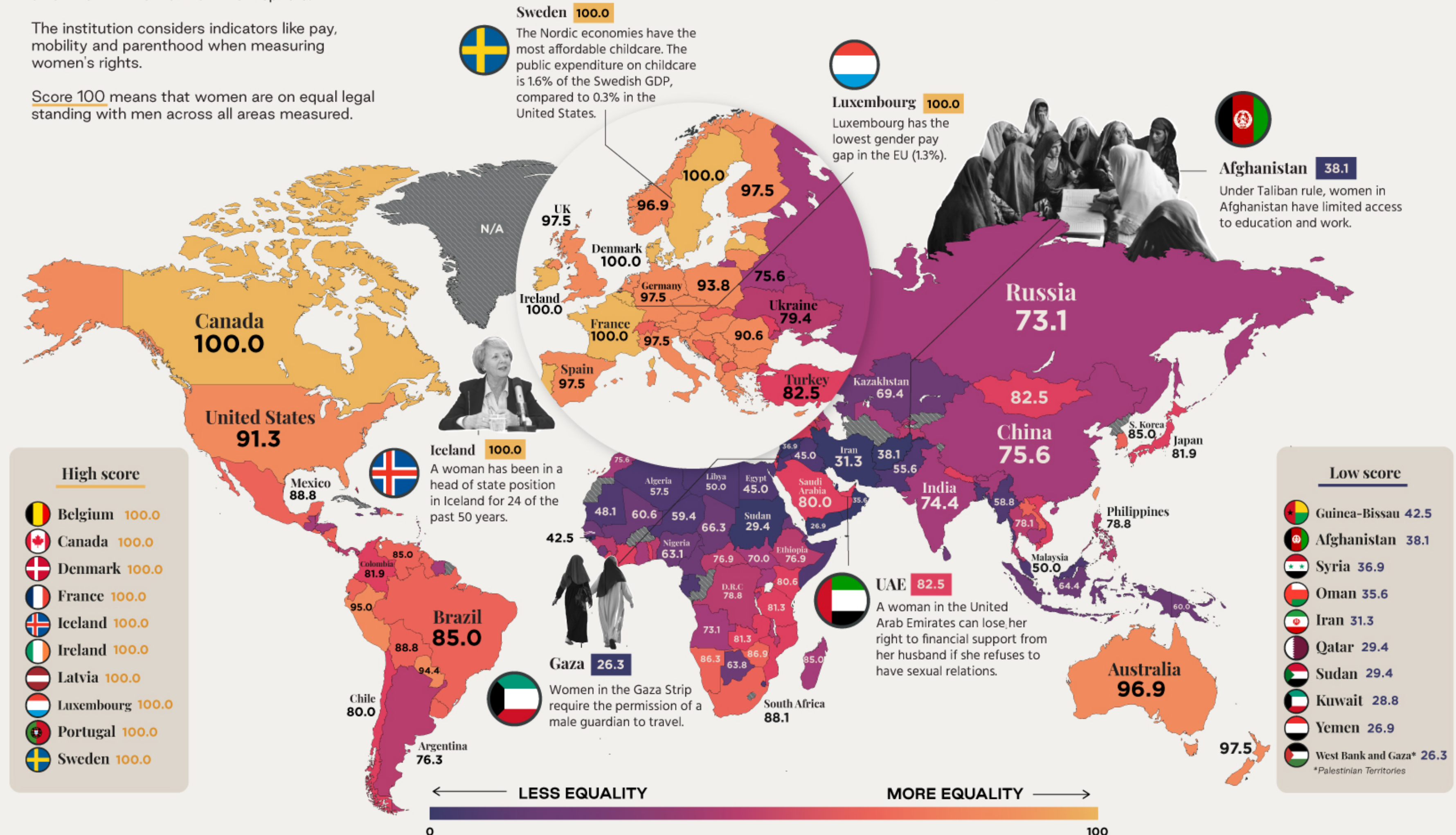
According to World Bank, only **10 countries** in the world offer full legal protections to women, all of them in the Northern Hemisphere.

The institution considers indicators like pay, mobility and parenthood when measuring women's rights.

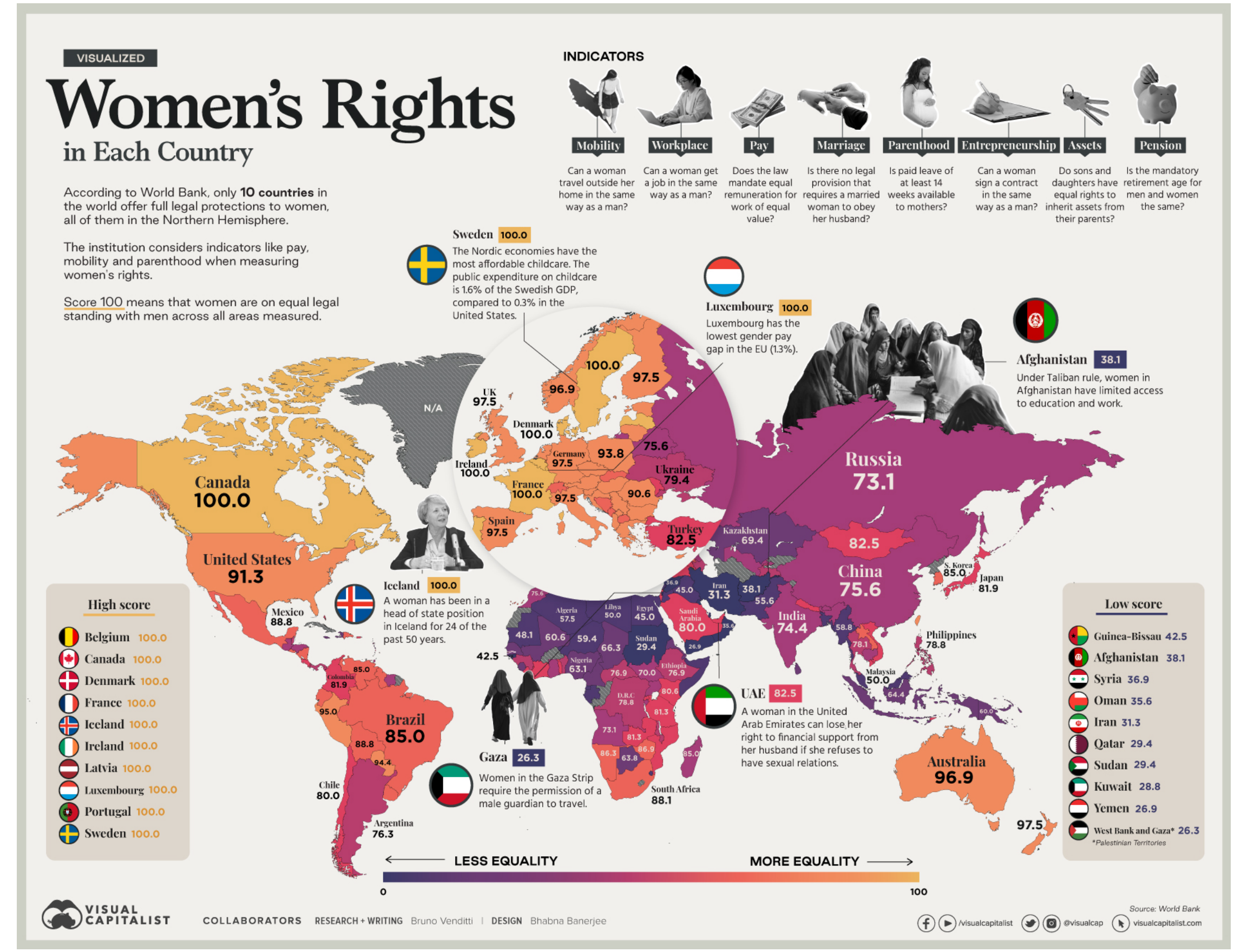
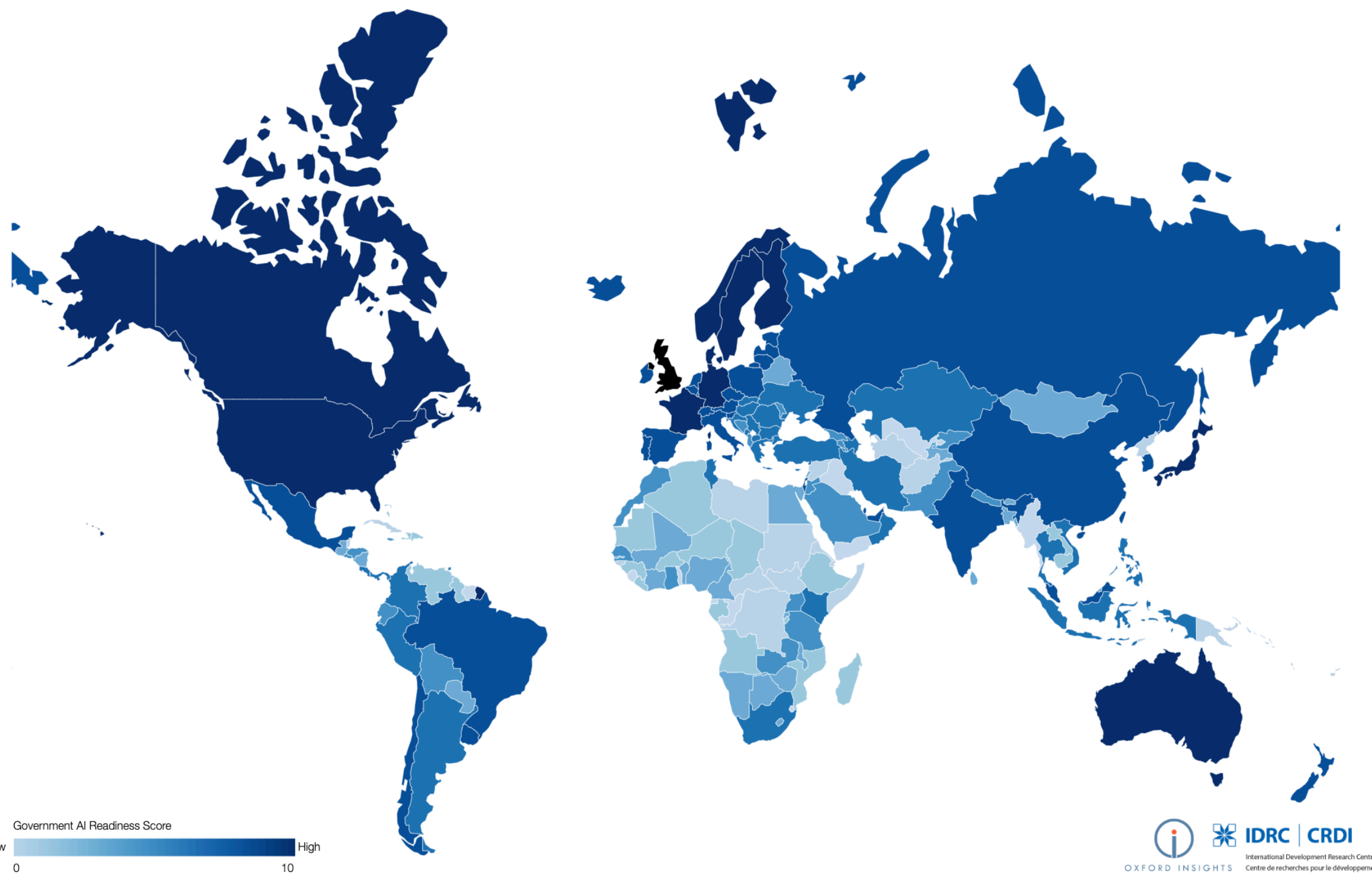
Score **100** means that women are on equal legal standing with men across all areas measured.

## INDICATORS

- Mobility**: Can a woman travel outside her home in the same way as a man?
- Workplace**: Can a woman get a job in the same way as a man?
- Pay**: Does the law mandate equal remuneration for work of equal value?
- Marriage**: Is there no legal provision that requires a married woman to obey her husband?
- Parenthood**: Is paid leave of at least 14 weeks available to mothers?
- Entrepreneurship**: Can a woman sign a contract in the same way as a man?
- Assets**: Do sons and daughters have equal rights to inherit assets from their parents?
- Pension**: Is the mandatory retirement age for men and women the same?







Notice any similarities?

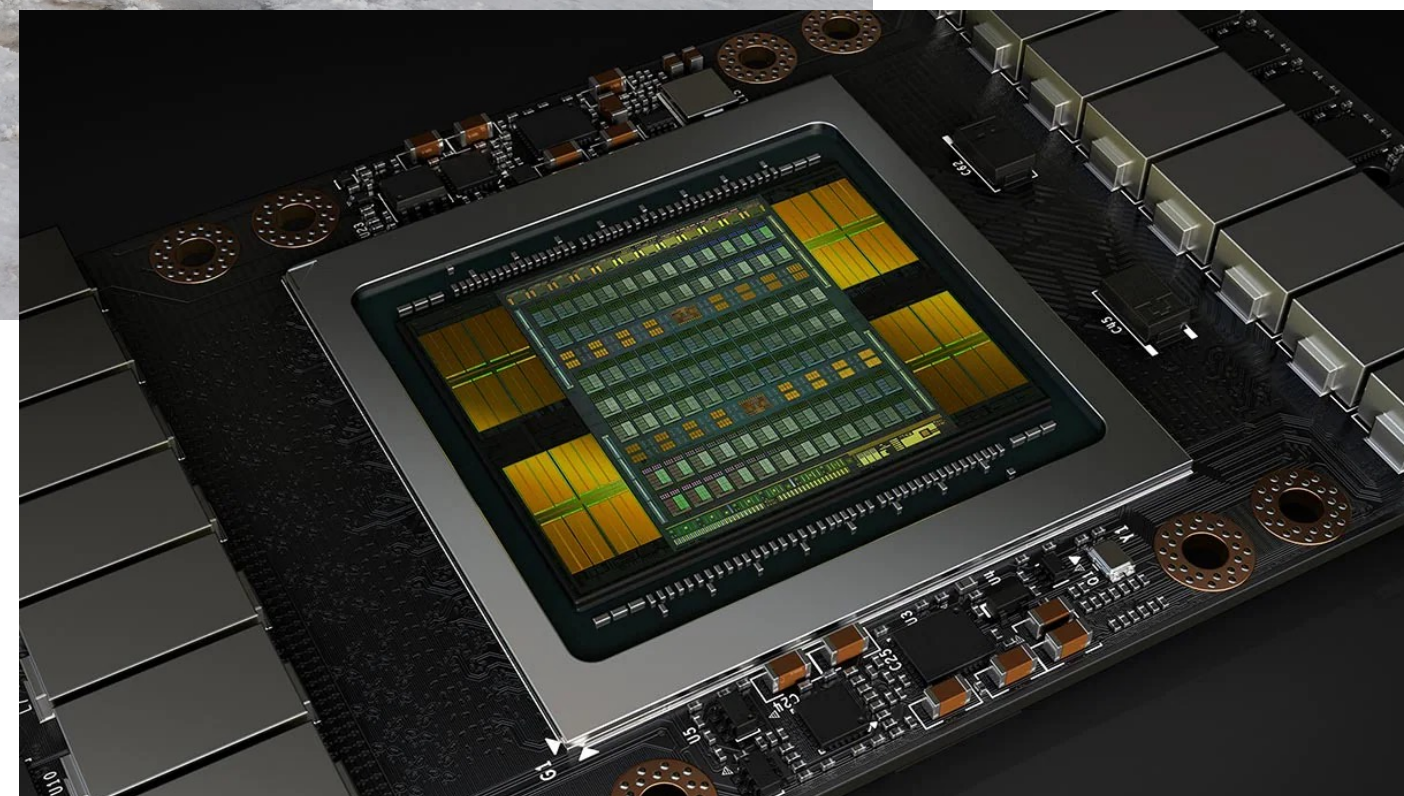
**How is artificial intelligence  
manufactured?**



## Hardware

GPUs and other pieces of the AI machinery require Rare Earth Minerals, and many of those come from countries that don't have women rights taken into consideration.

This is also becoming a preoccupation regarding political turmoil and women end up suffering more when civil wars or other social problems arise.



## Software

Information tagging is a taxing task that usually takes a toll in low-wage workers.

Many of this workers are woman and would end up getting paid >3USD per day.

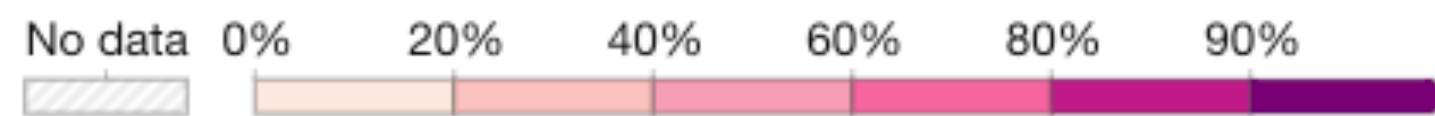
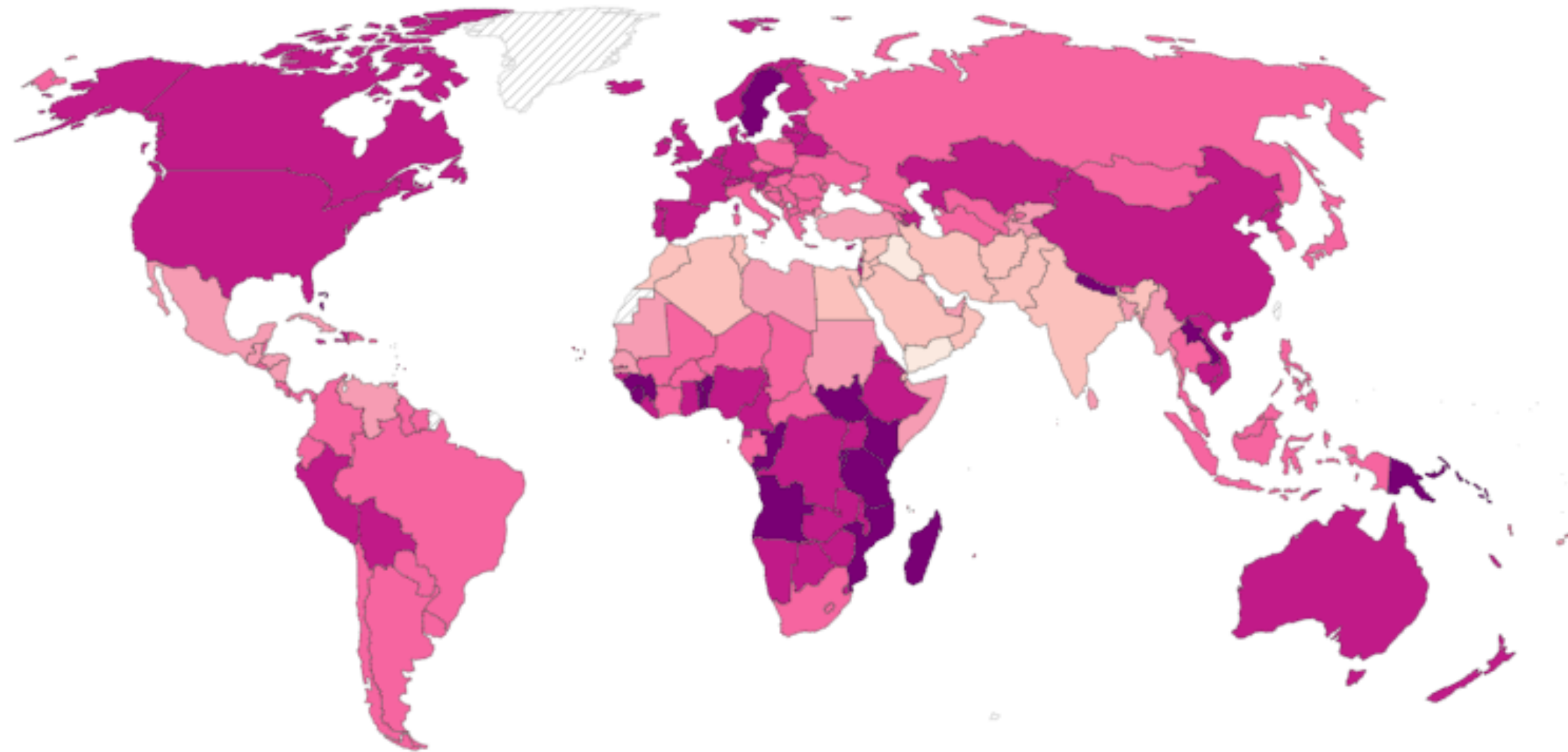


@teenybiscuit



## Ratio of female to male labor force participation rates, 2021

This ratio is calculated by dividing the labor force participation rate among women, by the corresponding rate for men. The labor force participation rate is the proportion of the population aged 15 years and older that is economically active.



Source: World Bank based on data from the International Labour Organization

OurWorldInData.org/female-labor-supply • CC BY

## Apple promised an expansive health app, so why can't I track menstruation?

296

By Arielle Duhaime-Ross | Sep 25, 2014, 12:55pm EDT

f t SHARE

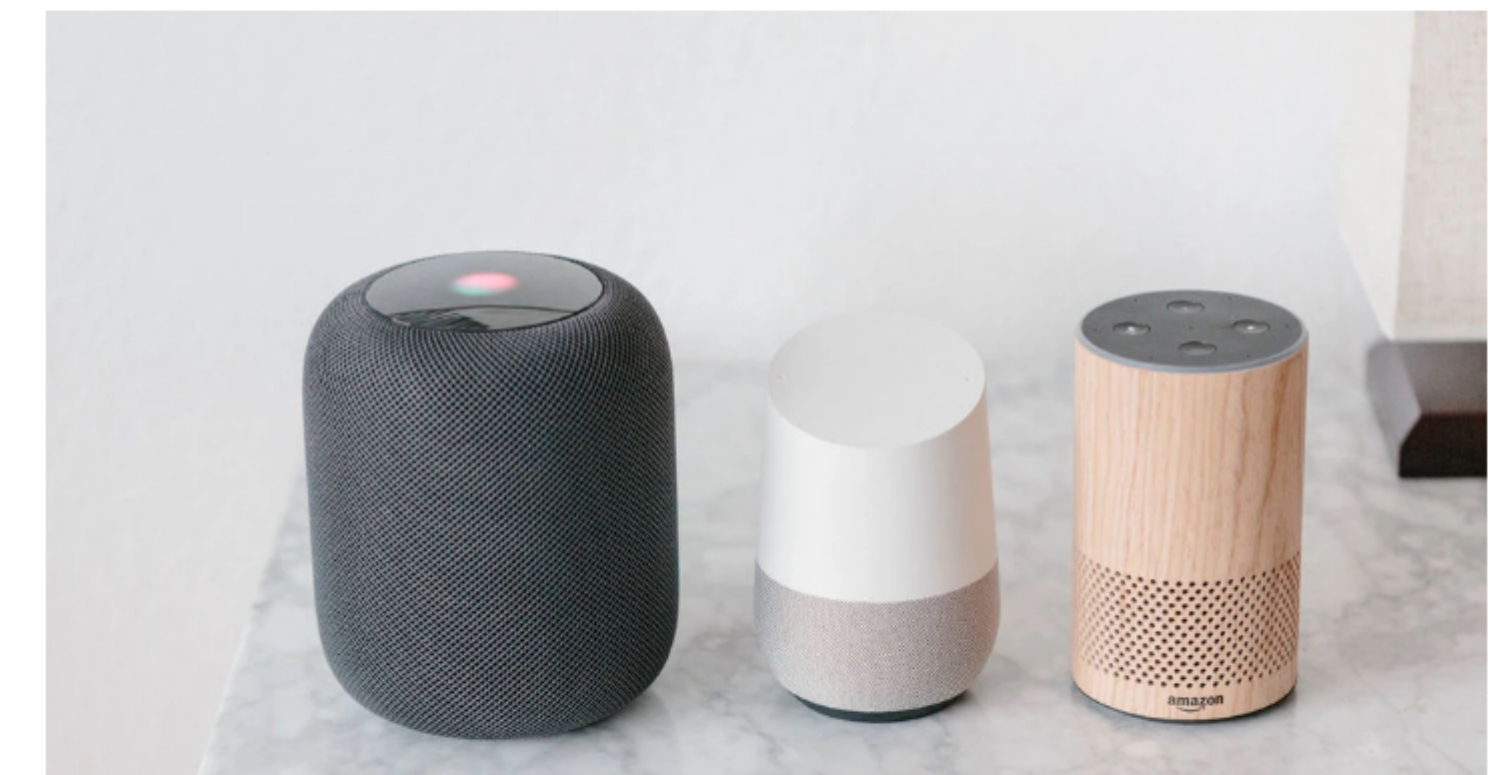


"With iHealth, you can monitor all the metrics that matter most to you."

- Craig Federighi, Sr. VP of Software Engineering, Apple

The New York Times

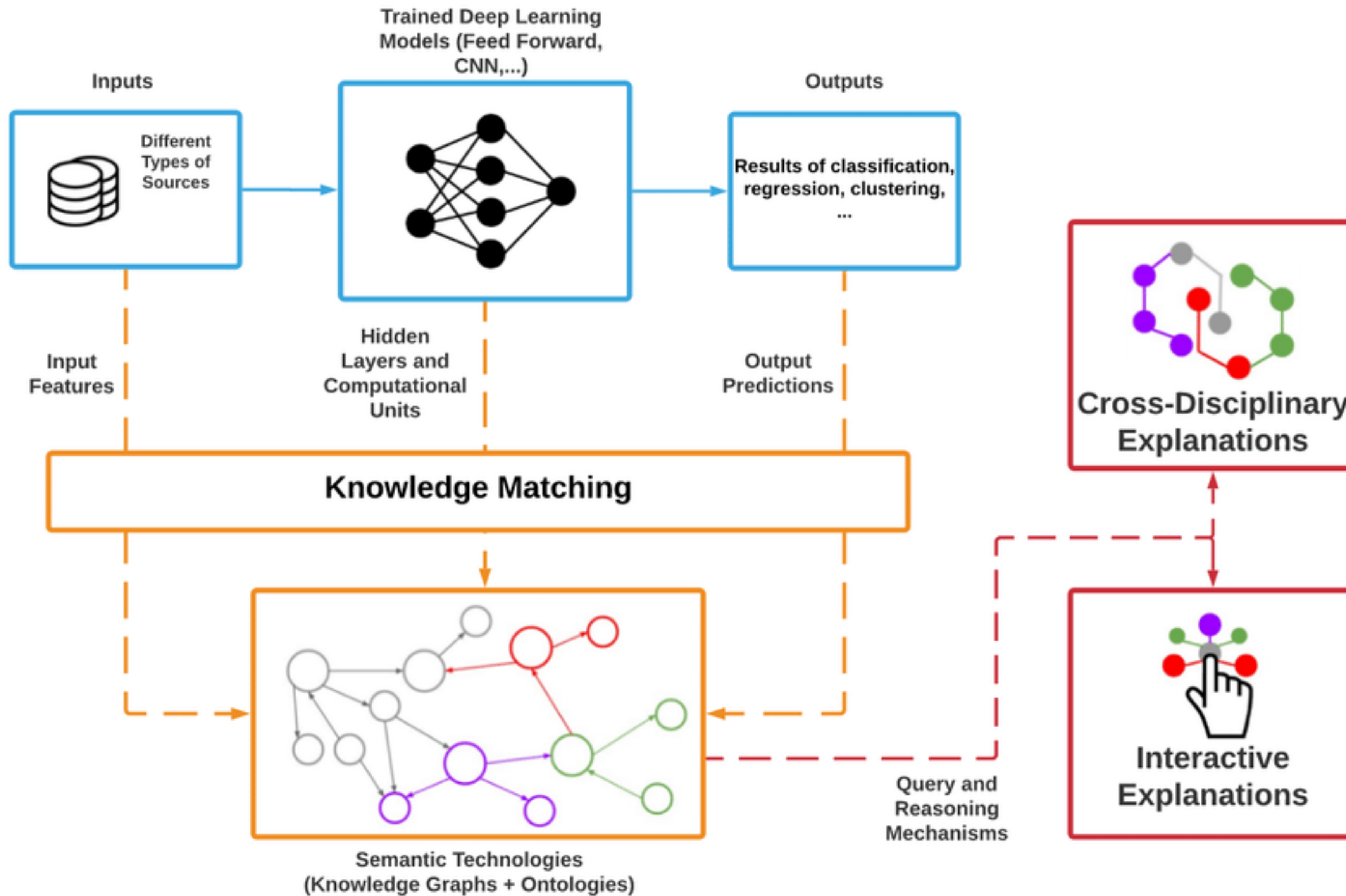
## Siri and Alexa Reinforce Gender Bias, U.N. Finds



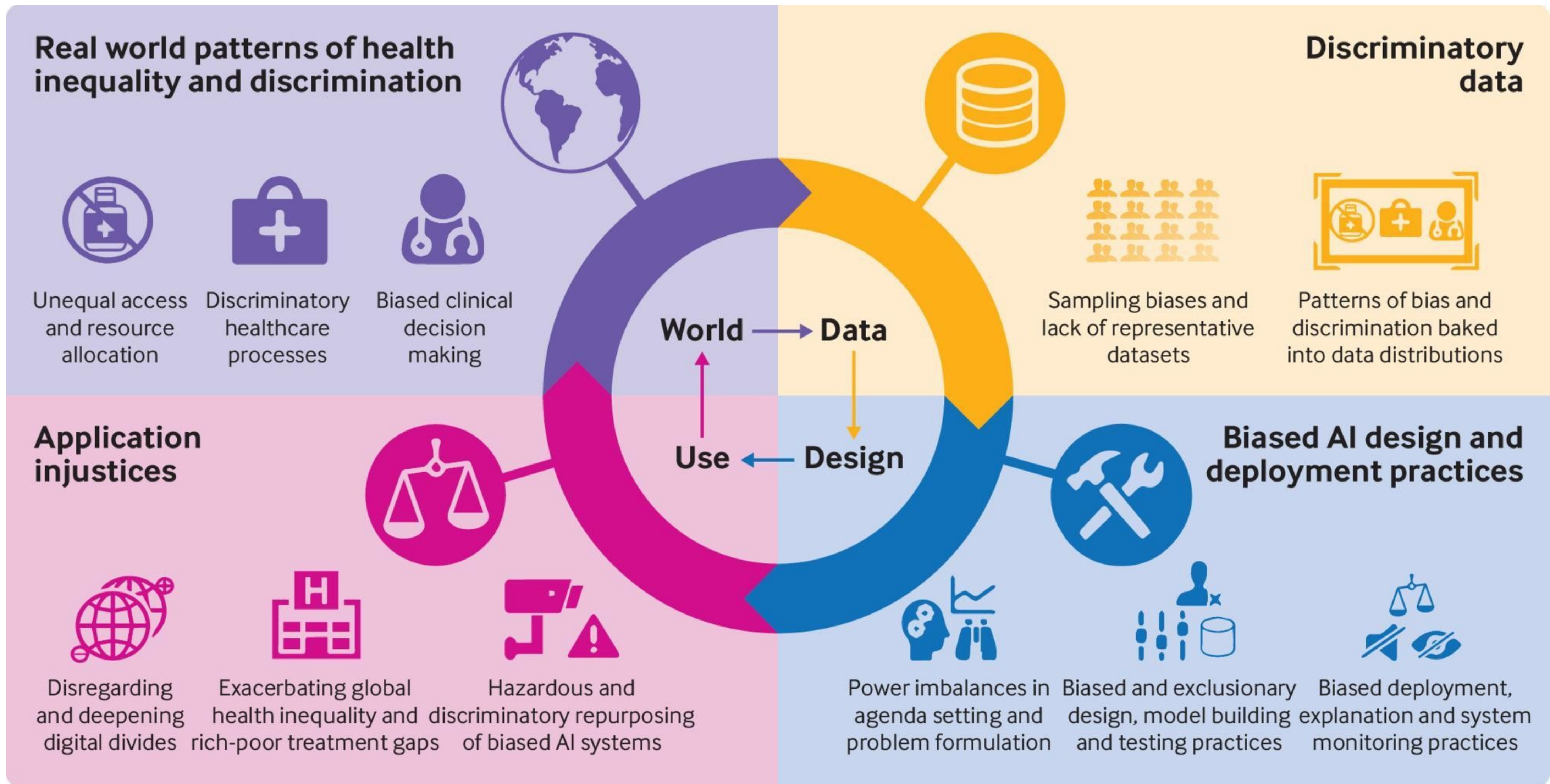


**How does the technology operate  
and what role do models play?**















**What outcomes does it generate?**



## Present Day Effects (Social Media)

### Negative body image

Social media platforms are often filled with images and messages that promote unrealistic beauty standards. Girls and women can face significant pressure to meet these ideals, which can lead to negative body image, low self-esteem, and eating disorders.

### Social comparison

Social media facilitates constant comparison with others. Women may feel pressured to compete and compare themselves to the seemingly perfect bodies, lifestyles, and achievements of others online, which can generate feelings of dissatisfaction and anxiety.

### Cyberbullying and trolling

Women often face a higher risk of cyberbullying and trolling on social media. Offensive and discriminatory comments can have a devastating impact on their mental health, causing stress, depression, and anxiety.

### Exposure to harmful content

Social media can expose women to harmful content, such as images of violence, abuse, or unsolicited sexual content. This exposure can have a negative impact on mental health and emotional well-being.

## Potential Future Effects

### Virtual assistants and chatbots

Virtual assistants and chatbots are often designed using female voices and are assigned service or support roles. This reinforces gender stereotypes and perpetuates the idea that women are meant to play assisting or caregiving roles.

### Online recommendations and personalization

Recommendation algorithms used by online platforms are often influenced by gender biases. This can lead to gender segregation in certain fields of interest, such as job advertisements, educational offerings, or product recommendations, thus reinforcing existing inequalities.

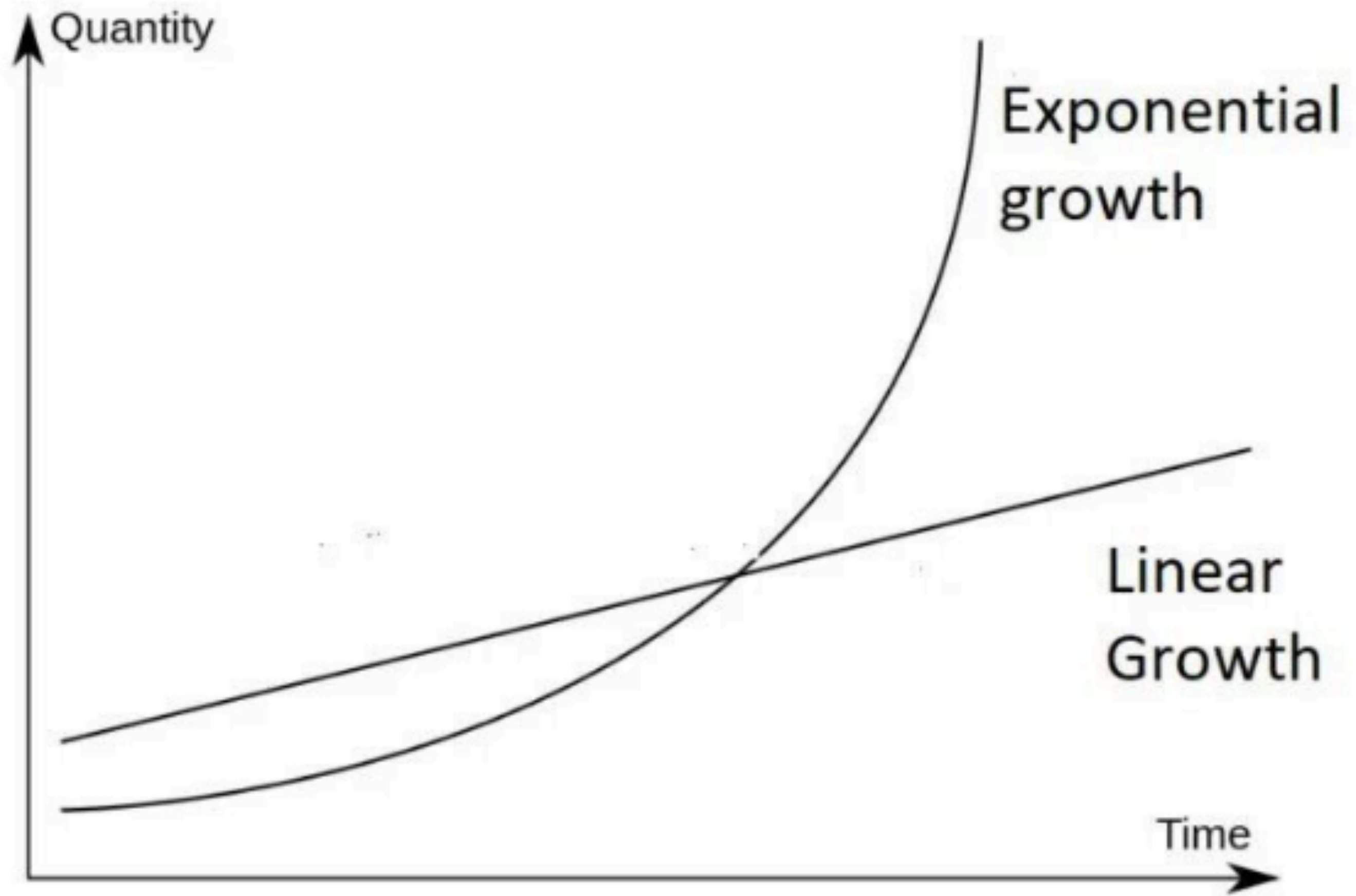
### Hiring and personnel selection

AI algorithms used in personnel selection processes can be affected by gender biases. If models are trained on historical data that reflects gender inequalities, such as lower hiring of women in certain professions, they are likely to reproduce these biases and perpetuate discrimination in future hires.

### Wage disparities

AI systems used to determine employee salaries and benefits can perpetuate gender wage disparities. If they are based on historical data reflecting wage inequalities, the algorithms can maintain and exacerbate the gender pay gap between men and women.











**Some solutions we can aspire to  
develop in the short term**



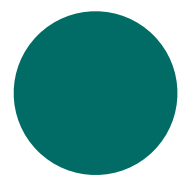
# Collecting and analyzing more inclusive data

We should find ways to promote the collection and analysis of data that takes gender differences into account. This involves ensuring equitable representation of men and women in the datasets used to train artificial intelligence algorithms, as well as considering other characteristics such as ethnicity and age to ensure more diverse representation.



# Greater diversity in technology development

Having more women and diverse individuals in leadership roles and decision-making in the technology industry. By increasing diversity in technology development, the needs and perspectives of different groups can be better addressed, thereby avoiding the perpetuation of biases and discrimination.

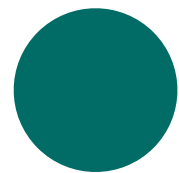


Collecting and analyzing  
more inclusive data

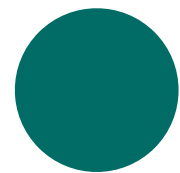


# Algorithm audits and gender impact assessments

Conducting algorithm audits to identify and correct possible gender biases. This involves regularly reviewing AI models and systematically evaluating their impact on different groups, especially in relation to gender issues and equity.



Collecting and analyzing  
more inclusive data



Greater diversity in  
technology development



# Transparency and accountability

It is crucial for companies and organizations that develop technology to be transparent about how data is collected, used, and analyzed, as well as the measures taken to address gender biases. Accountability is essential to ensure responsibility and the correction of identified issues.



Collecting and analyzing  
more inclusive data



Greater diversity in  
technology development



Algorithm audits and  
gender impact  
assessments



# Active participation of women in technology design and development

This involves not only the participation of women in the decision-making process but also in formulating questions and defining the problems that technology should address.





# Where do we start?

As we've seen, the impacts we see in gender are diverse; and not all of them directly related to Global South challenges. Nevertheless, having a **shared agenda** can improve the situation in three ways:

1. **Protection of women** affected by the material effects of the technology
2. Regulation and open discussions to **prevent biases and black-box thinking**, and/or data management
3. **Promotion of women talent** by helping them join the AI workforce (education, Upskilling, reskilling and overall STEAM initiatives like Laboratoria). This would lead to economic development for women and their countries.





**“Technology is neither good nor bad;  
nor is it neutral”**

**Melvin Kranzberg**







**Thank you!**

marcelo@laboratoria.la