

# Science shift to supporting the SDGs

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## Abstract

Although tens of thousands of scientists are working on individual goals of the SDGs, especially in the field of technology, in some of the largest countries half of public research funds are dedicated to military research: i.e. for the destruction of UN Goal 16, which is peace.

This paper treats military spending as an opportunity cost and shows how much funding in the field of research allocates against the UN goals.

From this, the urgent recommendation is to shift the public budgets for research from military to civil alternatives to reach UN Goal 16 Peace. A first step might be allow scientists to apply for funding research on alternative ways to achieve and keep peace as well as for funding within UN bodies such as UNDESA.

## A short success story at the beginning

*All human beings by nature strive for knowledge* - this first sentence from Aristotle's Metaphysics became an inspiration for global policy several times within the framework of the United Nations.

In 1945, scientists formulated the UN Charter (8). In 1973, the global Convention on International Trade in Endangered Species of Wild Fauna and Flora, which is still effective today, was implemented by the expertise of biologists. After researchers at Stanford University established the harmfulness of CFCs to the ozone layer, they were banned worldwide from 1995. In the meantime, the hole in the ozone layer has shrunk.

Countless scientists are involved in initiatives within the framework of the Sustainable Development Goals adopted in 2015. Leading SDG scientists such as e.g. Jeffrey Sachs from Columbia University are even invited to sessions of the UN Security Council.

The author contributes to three UN SDG related groups, the Sustainable Development Goal Partnerships, the UN IATF on Financing for Development and die UN IATT.

## Government-funded science: for or against the UN goals?

But in which extend do sciences support the implementation of the SDGs? This is a question of the science policy that decides over the allocation of funds. We present here a table featuring the percentage of public budgets for research that go to the military to destroy UN Goal 16 which is peace:

**Fig. 1**      **The wildest military researcher**                      **The smartest government research budgets**

<b>Israel</b>	<b>65 (see study)</b>	<b>Belgium</b>	<b>0,09 OECD</b>
<b>Iran</b>	<b>65 estimate</b>	<b>Austria</b>	<b>0,13 OECD</b>
<b>North Korea</b>	<b>65 estimate</b>	<b>Switzerland</b>	<b>0,17 OECD</b>
<b>United States</b>	<b>46 OECD</b>	<b>Mexico</b>	<b>0,23 OECD</b>
<b>Russian Federation</b>	<b>46 estimate</b>	<b>Denmark</b>	<b>0,33 OECD</b>
<b>Ukraine</b>	<b>46 estimate</b>	<b>Portugal</b>	<b>0,40 OECD</b>
<b>China</b>	<b>46 estimate</b>	<b>Italy</b>	<b>0,55 OECD</b>
<b>Turkey</b>	<b>21 OECD</b>	<b>Colombia</b>	<b>0,92 OECD</b>
<b>South Korea</b>	<b>15 OECD</b>	<b>Czech Republic</b>	<b>1,01 OECD</b>
<b>United Kingdom</b>	<b>14 OECD</b>	<b>Spain</b>	<b>1,11 OECD</b>
<b>Taiwan</b>	<b>9 OECD</b>	<b>Netherlands</b>	<b>1,34 OECD</b>
<b>France</b>	<b>6 OECD</b>	<b>Greece</b>	<b>1,48 OECD</b>
<b>Germany</b>	<b>4 OECD</b>	<b>Canada</b>	<b>1,97 OECD</b>

**Government Budget Allocation (GBARD) for Military Research as a percentage of GBARD. Sources:**

OECD:

<https://www.nationmaster.com/nmx/ranking/defence-budget-on-rd>

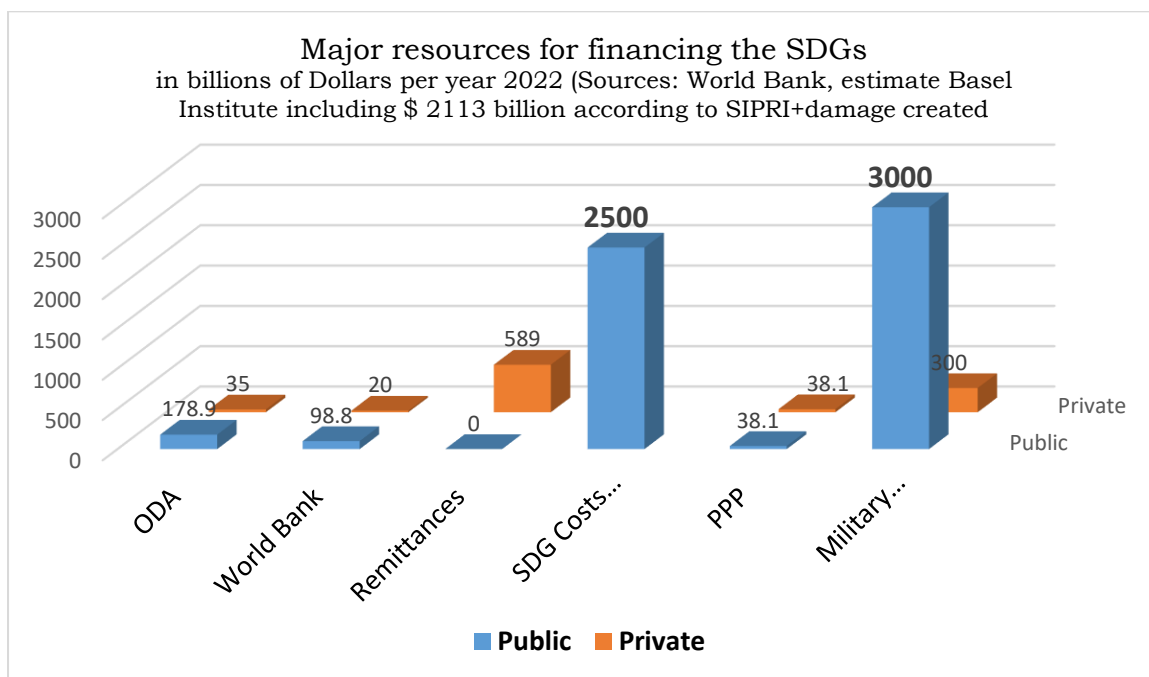
Israel: <https://www.neaman.org.il/Files/STE4.pdf>

Estimate: Basel Institute of Commons and Economics. For most of the countries, no figures are available, wherefore the estimates consider existing figures of countries involved in conflicts at the same size. The war over Ukraine may have dramatically increased the figures in 2022 and 2023. The budgets for research on how to end this war are still at zero.

## No budget for the SDGs without lowering the opportunity costs

It was one year before the launch of the Sustainable Development Goals, 2014, when UNCTAD published (1) an estimate of the \$ 2.5 trillion per year to implement the Goals in Developing Countries. As we can see in Fig. 2, this is ten times more than the entire ODA (\$ 178.9 billion) plus Public Private Partnerships (\$ 74.2 billion):

Fig. 2



Source: UN IATF on FfD, Opportunity costs the hidden source to financing sustainable development (3)

While the sources to finance the SDGs identified by the members of the UN Inter Agency Task force for Financing Development (UN IATF on FfD) would not allow any implementation, most SDG initiatives were downsized to make progress in single goals in single countries.

Nevertheless, the IATF on Ffd published expert contributions proposing new funds to implement the SDGs in developing countries (2) and - as happened on 3 March 2023 - a calculation of the opportunity costs for the military that include the damage achieved (3),



At the COP 27 in 2022, scientists contrasted the \$ 2'100 billion spent on military with the \$ 100 billion spent on addressing Climate Change. (see image) In 2022, the American Chemical Association (ACS) reclaimed that young scientists prefer to work for the military: "Many see a career as a military scientist as more rewarding—and offering better job security—than a career as a civilian scientist." (4)

According to the Journal Military Aerospace Electronics, the United States will spend \$ 130 billion in Military R/D in 2023. This is almost the double of Russia's entire Military budget. (5) and more than the entire National Research Budget of the Federal Republic of Germany (6).

## Policy recommendations / conclusions

For years, about half of the UN budget has been financed by five states: China, Germany, Japan, the United Kingdom and the United States (7). However, as we have seen in Fig 1, these countries also spend the highest amounts on research for their military, influencing by doing so 90 per cent of global military expenditures.

Honourable Nobel laureates such as the International Physicians for the Prevention of Nuclear War (IPPNW) fail to address these countries and to encourage them to implement the SDGs.

So what could happen within the United Nations though?

### *Article 62*

**1. The Economic and Social Council may make or initiate studies and reports with respect to international economic, social, cultural, educational, health, and related matters and may make recommendations with respect to any such matters to the General Assembly, to the Members of the United Nations, and to the specialized agencies concerned.**

**2. It may make recommendations for the purpose of promoting respect for, and observance of, human rights and fundamental freedoms for all.**

**3. It may prepare draft conventions for submission to the General Assembly, with respect to matters falling within its competence.**

1) The UN itself could provide research funding for the development of civilian alternatives to military spending, as provided for in Article 62 of the UN Charter (8). (see image)

2) Smaller donor states in donor conferences could demand from the main donors to also support research projects for conflict resolution in the affected conflicts and conflict areas, otherwise no sustainable improvement is possible in the long run. This applies to Afghanistan, Iraq, Iran, Mali, Palestine, Russia, Somalia, South Sudan, Syria, Ukraine and Yemen, for example.

3) The UN bodies may continue to enable publishing studies such as this one with access to the public.

Thank you for your attention!

## Acknowledgements

My thanks go to the UN Division for the Sustainable Development Goals which allows me to publish our research since 2016 yet, to the UN Inter-Agency Task Force on Financing for Development, which allows me to publish our research since 2017, to the UN Multi-stakeholder Forum on Science, Technology, and Innovation for the SDGs that invited me for a contribution the second year now.

My special thanks go to the Grand Duchy of Luxemburg and the Republic of Yemen who support my research since 2022.

## References

(1) UNCTAD estimate SDG costs 2014:

<https://unctad.org/press-material/developing-countries-face-25-trillion-annual-investment-gap-key-sustainable>

(2) UN IATF on FfD, 28 New Funds to Financing Development

[https://developmentfinance.un.org/sites/developmentfinance.un.org/files/28 New Funds To Financing Development.pdf](https://developmentfinance.un.org/sites/developmentfinance.un.org/files/28%20New%20Funds%20To%20Financing%20Development.pdf)

(3) UN IATF on FfD, Opportunity costs the hidden source to financing sustainable development:

[https://developmentfinance.un.org/sites/developmentfinance.un.org/files/Opportunity costs the hidden source to financing sustainable development.pdf](https://developmentfinance.un.org/sites/developmentfinance.un.org/files/Opportunity%20costs%20the%20hidden%20source%20to%20financing%20sustainable%20development.pdf)

(4) American Chemical Society, Military Science and Technology:

<https://www.acs.org/careers/chemical-sciences/fields/military-science-and-technology.html>

(5) U.S. military spending headed up in 2023, with \$773 billion proposed for programs, research, and procurement,

<https://www.militaryaerospace.com/defense-executive/article/14270139/military-spending-research-procurement>

(6) Research Expenditures of the Federal Republic of Germany

[https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/Forschung-Entwicklung/\\_inhalt.html](https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bildung-Forschung-Kultur/Forschung-Entwicklung/_inhalt.html)

(7) Example donors of OCHA 2022:

<https://fts.unocha.org/global-funding/overview/2022>

(8) The UN Charter from 1945, United Nations, Article 62

<https://treaties.un.org/doc/publication/ctc/uncharter.pdf>