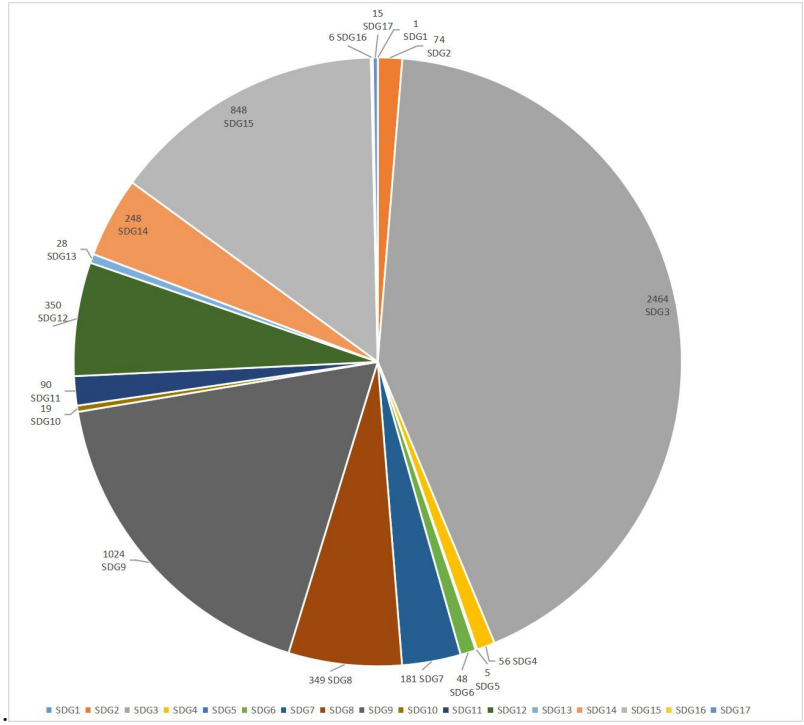
Hiroshima University Statistical Report 2016 - 2018: Published Papers Related to SDGs

Written by WU Xuan

The 17 Sustainable Development Goals (SDGs) (Fig. 1) were adopted by all United Nations Member States in 2015, providing a shared blueprint to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. To see which SDGs papers published in journals by Hiroshima University researchers focus more on after SDGs were adopted, statistical analysis of papers is conducted. Because year 2019 just passed, complete 2019 statistical data have not been available. 6144 data including titles, abstracts, journals and research fields of papers published from 2016 to 2018 are selected to be judged which SDGs each paper is related to. One paper can be related to more than one SDG.

Fig. 1 The 17 Sustainable Development Goals (SDGs)

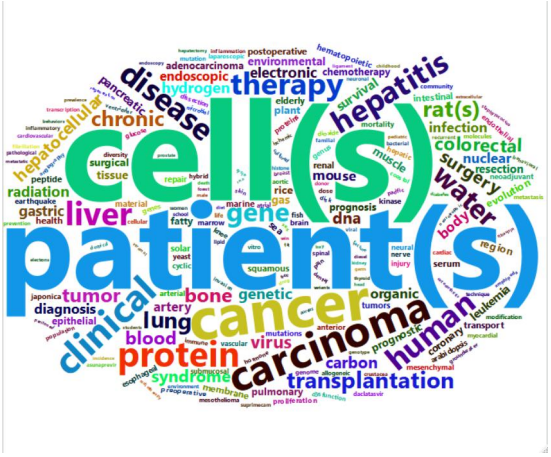
Fig. 2 Total numbers of papers related to each SDG, 2016 - 2018



The pie chart above (Fig. 2) shows total numbers of papers related to each SDG. It can be seen that these papers concentrate most on SDG3. While only 1 paper concentrates on SDG1. SDG9 and SDG15 make up another two big items.

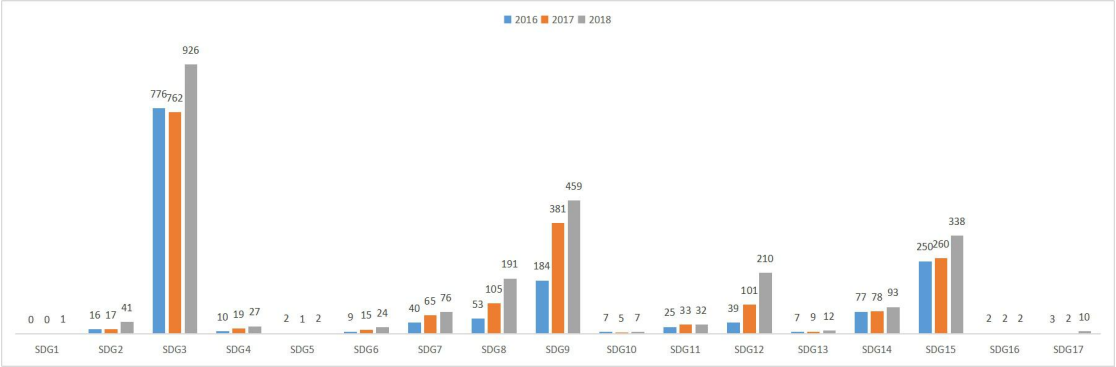
To easily visualise and produce a summary of data, notional words are selected from titles to create a word cloud. The word cloud below (Fig. 3) verifies that these papers contribute most to SDG3. Words related to human health like patient(s), cell(s) and cancer have higher frequencies.

Fig. 3 The word cloud made from notional words selected from titles



The bar graph below (Fig. 4) outlines numbers of papers related to each SDG year by year. Papers related to SDG3 have the largest number in each year, while the number of papers related to SDG1 is the lowest. The numbers of papers related to SDG2, SDG4, SDG6, SDG7, SDG8, SDG9, SDG12, SDG13, SDG14 and SDG15 keep rising from 2016 to 2018. SDG9 and SDG12 have achieved substantial increases. There are 459 papers related to SDG9 in 2018, which are 275 more than those in 2016. And papers related to SDG12 in 2018 are more than 5 times as many as those in 2016. This demonstrates that researchers pay closer attention to sustainable industrial innovation, consumption and production than before. The numbers of SDG1, SDG5, SDG10 and SDG16 remain relatively unchanged.

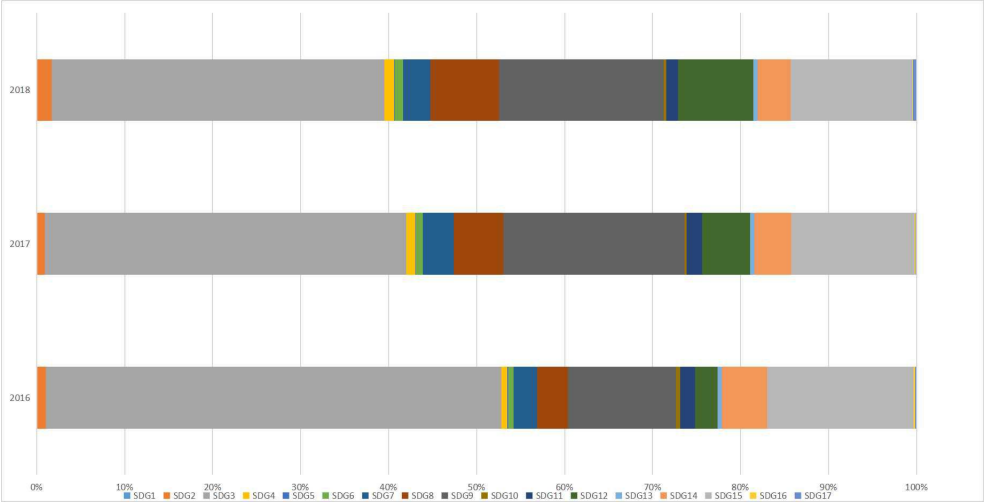
Fig. 4 Numbers of papers related to each SDG by year



The chart below (Fig. 5) compares the percentages of 17 SDGs year by year. Although the diagram suggests that papers related to SDG3 cover the largest proportion in each year, the proportion keeps decreasing from 2016 to 2018. At the same time, the percentages of papers

related to SDG8 and SDG12 achieve substantial growth, which implies that sustainable economic development is attached significance to gradually. Researchers are ambitiously promoting research activities to link their research to more fields of SDGs.

Fig. 5 Percentages of 17 SDGs by year



It should be considered that fields of research may have influence on numbers of published papers because of different research cycles and content. So it is no wonder that there are so many papers related to SDG3, which is about people's health. And many papers contribute to SDG9 and SDG15, because these two SDGs cover a lot of fields of natural science. We are looking forward to seeing that more and more research can cover more fields of SDGs to help make the SDGs a reality to improve people's life and protect the earth.

Notes:

To make my judgment more accurate, I read detailed targets of each SDG first to know more information and then I judged papers by their titles and abstracts. Sometimes I also referred journals and research fields if I could not make decisions after reading titles and abstracts. In the beginning, I was not so familiar with targets of each SDG, it was not so easy to make judgment quickly. Several months later, work went smoothly and I could judge over 60 data in one hour. There were some academic words which were not easy to understand. I needed to consult the dictionary and Google in this situation, which helped me better understand the papers and finish the work. When I read some abstracts of papers whose research targets are at the micro level like cells and molecules, I tended to judge that those papers are not related to any SDGs if practical applications are not mentioned in the paper abstracts. It should be noted that the result may be not so accurate and objective because of my limitations of time, knowledge and ability although I have tried my best to finish the work.