LEIDEN IMPACT MATRIX

Based on: Impact Matrix in Leiden protocol for research assessments 2015-2021

Interaction with > / Deliverables v	Academic field (scientific interactions)	Professional field (professional interactions)	Commercial sector / (non) Governmental sector (interactions with companies / enterprises / public entities)	Society at large (public interactions)
Knowledge production and exchange (results)	Outreach activities for/with peers ▪ (Co)Publications (articles, books, comments) (refereed vs. non-refereed, open access) ▪ Outcomes of specific research projects, dissertations (PhD supervising) included ▪ Education to bachelor/ master students ▪ Active participation in scientific/ academic associations	Outreach activities for/with professionals ▪ (Co)Publications / interviews in professional journals, manuals, books ▪ Lectures for professionals ▪ Projects / events with/for professionals	Outreach activities for/with specific companies and public entities ▪ (Co)Publications / interviews in business or governmental media, manuals, books ▪ Lectures for employees, officials / round table discussions ▪ Collaborative projects / events with companies or public entities	Dissemination of academic insights to general audiences ▪ General (co)publications (books, articles / comments / interviews in papers, public journals, magazines) ▪ Public lectures ▪ Open access ▪ MOOCs, etc.
Knowledge utilization (effects)	Use of research outcomes by peers ▪ Use of information, instruments, infrastructure / research facilities, datasets, tests, labs, models, processes, software tools or designs that the unit has developed or obtained ▪ Citations	Use of research outcomes by professionals ▪ Use of information, instruments, models, processes, software tools or designs that the unit has developed ▪ Advices to professionals ▪ Support of young professionals through a center of entrepreneurship, or incubators	Use of research outcomes by companies / public entities ▪ Use of information, instruments, models, processes, software tools or designs that the unit has developed ▪ Contributions to clusters (BioScience Park, Museums, etc.), and standardization committees (CEN, ISO) ▪ Consultancy / Policy advice ▪ Contribution of expertise to aspects of societal importance (i.e. membership of committees, councils, etc.)	Use of research outcomes by general audiences ▪ Contributions into public discussions on forums, television, in social media (You Tube, Blogs) and so on ▪ Contributions to events / exhibitions ▪ Added societal value alumni
Knowledge exploitation (revenues)	Marks of recognition from peers ▪ Research grants / Science awards ▪ Membership of scientific committees, editorial boards ▪ Appointment as guest scholar/lecturer Positions in rankings and EU-networking activities and alliances External funding ▪ NWO (Topsectoren included), EU (ERC, Collaborative programmes); other sources ▪ Budget for Impact	Returns/gains through: ▪ Contract research ▪ Courses / training for professionals (post-academic education) ▪ Participation in advisory boards (monitoring-, evaluation committees) ▪ Use of research facilities by professionals ▪ Practices / entrepreneurship (spin outs / spin offs) ▪ Secondary positions	Returns/gains through: ▪ Contract research (including consultancy) ▪ Professional training/courses (post-academic education) ▪ Participation in advisory boards (monitoring-, evaluation committees) ▪ Use of research facilities of and by companies / other bodies ▪ Patents / licences/disclosures/revenues	Returns/gains through: ▪ Public prizes ▪ (Paid) Open courses ▪ Appointments / positions paid by societal entities ▪ Employment / jobs

Explanation

- This matrix can be used as a tool to describe different types of impact of the scientific/academic work of an institute or an individual scientist/researcher in relation to users and stakeholders.
- At the level of institutes, the matrix is also used in the Leiden Protocol for Research Assessments 2015-2021 and covers the demands of the SEP and is consistent with other contributions in the debate on impact and valorization.
- The matrix reflects the idea that impact of knowledge is only meaningful in relation to users, customers and stakeholders in the academic field, professional field, commercial and (non) governmental sector, or society at large. These different target groups are listed in the upper row of the matrix: 'interactions'.
- Three different types of deliverables of knowledge can be identified: Knowledge production and exchange (results of knowledge), Knowledge utilization (effects of knowledge in the various fields), and returns or gains of Knowledge exploitation. These deliverables are listed in the far left column of the matrix.
- In each cell of the matrix examples of the specific type of impact are presented. For the row 'Knowledge production and exchange' these examples refer to outreach activities, sometimes in collaboration with partners in the various fields. The row 'Knowledge utilization' refers to the use of knowledge generated by the research unit, or contributed by experts of the research unit, by a user in one of the target groups. The row 'Knowledge exploitation' refers to research activities or contributions of expertise which result in revenues or resources for the research unit or researcher(s). This category also includes marks of recognition from peers, positions in rankings and external funding.
- The examples in the matrix show a variety of impact activities, now placed in a more or less logical connection between scientific / academic output and different target groups. These examples should be seen as suggestions to the scientist/researcher (and to the faculty or institute) involved. The types of impact that are relevant will be very different for different scientists/researchers (and faculties or institutes). An institute or faculty can use the matrix to describe those types of impact that are most relevant for the field. For example: the Faculty of Science may describe its patents portfolio and the Faculty of Law its annotations that play a role in Court. This also means that not all cells in the matrix have to be filled: the research unit can focus on those cells that are most appropriate for their type of research The same reasoning applies to the use of the matrix at the level of the individual scientist/researcher.