

Committee on Development and Intellectual Property (CDIP)

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MAPPING OF ACTIVITIES RELATED TO TECHNOLOGY TRANSFER

Document prepared by the Secretariat

1. During its sixteenth session, held from November 9 to 13, 2015, the *Committee on Development and Intellectual Property (CDIP)*, while discussing the Evaluation Report on the Project on *Intellectual Property and Technology Transfer: Common Challenges – Building Solutions*, requested the WIPO Secretariat to “map existing WIPO activities related to technology transfer”.
2. Accordingly, the Annex to this document contains the said mapping of activities undertaken by WIPO during the 2014/15 biennium.
3. *The CDIP is invited to take note of the information contained in the Annex to this document.*

[Annex follows]

I. WIPO TECHNOLOGY TRANSFER SUPPORT SERVICES AND ACTIVITIES FOR UNIVERSITIES AND RESEARCH INSTITUTIONS

1. The Secretariat provided information regarding existing technology transfer-related services by the groups of their expected impact on the pillars of enabling ecosystems for the main knowledge and IP generators in developing countries (Universities and Research and Development (R&D) Institutions). In addition, below are WIPO activities related to collaboration and exchange of information with other relevant international and regional organizations that can provide knowledge transfer services beyond WIPO's mandate, with concrete information regarding events and/or countries where those services were delivered in the most recent 2014/15 biennium. Mapped services are presented in following thematic chapters:

- (a) Advisory Services and Programs Related to Creation of Enabling Legal Framework for Knowledge / Technology Transfer;
- (b) Establishment of Knowledge / Technology Transfer Organizational Structures;
- (c) Development of Human Capital – Capacity Building Programs;
- (d) Creation of Tools, Manuals and Training Materials;
- (e) WIPO Standing Committees Addressing Technology Transfer Issues;
- (f) WIPO Facilitated Collaborations in Specific Areas of Knowledge / Technology Transfer;
- (g) WIPO Participation in Relevant Knowledge Transfer Forums; and
- (h) Economic Research and Studies on Policies and Outcomes of Technology Transfer.

II. ADVISORY SERVICES AND PROGRAMS RELATED TO CREATION OF ENABLING LEGAL FRAMEWORK FOR TECHNOLOGY TRANSFER

2. *Innovation Policies* – During 2014 and 2015, the Innovation Policy Section in the small and medium-sized enterprises (SMEs) and Entrepreneurship Support Division undertook a series of projects to support Member States integrate IP considerations into their innovation policies. In that context, recommendations made to Cameroon, Sri Lanka, Rwanda, Jamaica and Trinidad and Tobago, the developing and least developed countries (LDCs) that benefitted from this assistance, included specific recommendations on how innovation policies may rely on the IP system for creating the necessary framework for technology transfer.

3. For example the recommendations for Sri Lanka included, under the expected outcome of effective management of research the following outputs:

- (a) Policy that ownership of intellectual property arising from research funded by government vest in the university or institution which generated that intellectual property (IP) adopted;

- (b) The Universities Act 1978 amended to expressly refer to research and commercialization being part of the mission of universities;
 - (c) Guidelines on the advantages and disadvantages of particular commercialization pathways (utilization, licensing, and assignment) for the assistance of research organizations prepared;
 - (d) In larger universities and research organizations technology management offices (TMOs) and a single TMO to serve the collective needs of smaller universities and research organizations established;
 - (e) The formation by universities of technology start-up companies facilitated; and
 - (f) Intellectual property management policies established in universities and public research organizations.
4. Similarly, under the expected outcome of the practice of searching patent databases integrated into the research practices of all universities and research organizations the following outputs were included:
- (a) Research organizations adopt a process of literature and patent searching in the project planning phase; and
 - (b) Identification of technology patented in other countries, but not in Sri Lanka, which can be adapted to meet the needs and conditions in Sri Lanka.
5. Similar recommendations specific to the needs of the country were made with respect to the other countries that benefitted under these projects. Some of these reports are available at <http://www.wipo.int/ipstrategies/en/>.
6. *IP Institutional Policies* – The activities concerning the development of IP Institutional Policies for Universities emphasized the important role of technology transfer and dissemination of research results for the benefit of society. The purpose is to create a legal certainty that promotes scientific research and a harmonious working relationship between industry and academia. WIPO's work aims at setting the framework through which an institution intends to deal with the ownership and management of its IP with fair sharing of benefits including the widest dissemination of research results. The overall objective was to strengthen the ability of universities and research institutions in taking full advantage of the IP system.
7. In supporting universities and R&D institutions to develop appropriate IP institutional policies, WIPO carried out several activities also as part of broader projects, such as the "Establishment of TTOs in Tunisia". In this project, WIPO provided Training on IP Institutional Policies (Tunisia, April, 2015), followed by three video conferences and finalized the approval of IP Institutional Policies in four Institutions: the Technical Center for Chemistry (CTC) – "*Le centre technique de la chimie*"; the Techno-Park "El Gazala" (dealing with IT technologies); the Techno-Park "Sidi Thabet" (biotechnology center); and the Technical Center for Packaging "PACKTEC."
8. In addition, WIPO organized the following capacity building programs to raise awareness about the importance of creating suitable IP related framework on the level of institution, and to facilitate the process of its definition:
- (a) National Seminar on IP Policies in Universities (Belarus, April 2015);

- (b) National Seminar on Intellectual Property Policies in Universities and Research Institutions (Kyrgyzstan, June 2015);
- (c) National Conference on Intellectual Property Policies for Universities and Innovation (Bulgaria, November 2015); and
- (d) Country project to provide technical assistance to Botswana government-funded research institutions and universities in support of innovation and IP mainstreaming in institutional strategies (Botswana, November 2015).

III. ESTABLISHMENT OF KNOWLEDGE / TECHNOLOGY TRANSFER ORGANIZATIONAL STRUCTURES

9. The work on awareness raising and promotion of IP rights management and knowledge transfer processes and procedures in LDCs, developing countries and countries in transition intensified in WIPO from early 2000, and resulted in a number of studies and programs regarding an importance of IP policies / strategies on the national level, capacity building programs and specific thematic and countries projects enhancing capacity of creators and users of knowledge and IP to further develop it and manage towards competitive markets. In that context, particular importance was given to universities and R&D institutions, as a major generator of IP in developing countries.

10. As a result of numerous IP related capacity building WIPO programs for academic professionals, there is a general awareness in those institutions that research results are potential intellectual assets, and that there are legitimate expectations of national societies that universities should manage created knowledge and IP in a way to transform them in assets that can be transferred and if applicable, commercialized. However, most universities in beneficiary countries are still lacking practical knowledge on how to establish organization structures – such as professional technology management units that will take over the process of intellectual property rights (IPRs) management, based on national laws and institutional IP Policies.

11. Therefore, WIPO has been providing expert advice, through customized capacity building programs or specific Projects based on needs assessment surveys that provided to beneficiary institutions action plans on how to establish professional IP management offices, how to identify and recruit staff for those IP related service providers, how to provide education for professionals and how to establish incentives for researchers in order to take fully part in knowledge management processes. For example, in 2013–2014, an “Action Plan” was defined for the Technology Transfer Center of Georgia, with “step by step” approach in creating legal and organizational structures in the center. In addition in 2014–15 follow-up technology transfer related workshops, addressing the problems of setting up necessary organizational structures, were delivered:

- (a) “Working Together for Promoting Knowledge Transfer and IP Commercialization in Georgia”, March 10 to 11, 2014, Tbilisi, Georgia;
- (b) “National Workshop on Technology Management for Universities”, May 12 and 13, 2014, Brunei Darussalam;
- (c) “WIPO Sub- regional Workshop for Technology Transfer Offices”, May 20 – 21, 2014 Skopje, FYR Macedonia;

- (d) “WIPO Sub – regional Workshop on IP Commercialization “Working Together” for Technology Transfer Offices in the Region, September 15 and 16, 2014, Belgrade, Serbia;
- (e) “WIPO IPR Management Workshop for Universities and Research and Development Institutions from Developing Countries”, members of the WIPO Re:Search Program, November 4 and 5, 2014, New York, United States;
- (f) “WIPO Sub- regional Seminar on International Technology Transfer and Open Innovation”, November 17 to 19, 2014, Katmandu, Nepal; and
- (g) WIPO Sub-regional Workshop on WIPO Pilot Project for Universities and Research Centers in Central American Countries, November 24 to 26, 2015, Panama Knowledge City, Panama.

12. WIPO also developed Pilot Projects for the Establishment of Technology Transfer Offices (TTOs) in developing countries, as a way to create a model of infrastructure for demonstration purposes, so that the knowledge acquired during implementation of those Pilot Projects can be further disseminated in the country and the region. The Project was launched in 2014 in Tunisia, and in 2015 activities focused on “bottom up” development of legal framework for TTOs, with the view to finalize the action plan and to create fully operational TTOs for nominated institutions in Tunisia in 2016. WIPO also organized in 2014 a fact finding mission in Algeria, in order to assess the current situation regarding knowledge transfer and define an Action Plan for the establishment of a model TTO.

IV. TECHNOLOGY AND INNOVATION SUPPORT CENTERS (TISCs)

13. WIPO in cooperation with national and regional industrial property offices supports the establishment and development of Technology and Innovation Support Centers , which are designed to provide innovators in developing countries with access to locally based, high quality technology information services and other related services. To date there are 50 WIPO Member States implementing a national project developing TISC networks and over 350 individual TISCs within these networks. For more information please consult the TISCs website (www.wipo.int/tisc).

14. To support the development of TISCs and raise awareness of IP and technology information among local stakeholders during the 2014/2015 biennium, 50 national planning and training events were organized on-site, focusing on accessing and effectively using patent and scientific and technical journal databases, as well as 10 sub-regional meetings organized promoting the sharing of best practices and experiences on a regional level.

15. In order to further strengthen online training and encourage the exchange of experiences, the “eTISC” knowledge management platform provides social media tools and integrates new services aimed at reinforcing WIPO’s activities in supporting the development of TISCs worldwide, including specially targeted e-learning modules, tutorials and webinars. The TISC community of nearly 1,500 people can be joined online at <http://etisc.wipo.org>.

16. Moreover, new TISC Clinic services in conjunction with the Inventor Assistance Program (IAP) were launched in 2015 as pilot projects in Colombia and in Morocco, providing *pro bono* legal assistance to eligible under-resourced inventors and small businesses.

Access to Research for Development and Innovation (aRD*i*)

17. Two public-private partnership programs facilitate access to subscription based databases. The Access to Research for Development and Innovation program provides access to scientific and technical information in developing countries. By improving access to scholarly literature from diverse fields of science and technology, the aRD*i* program seeks to reinforce the capacity of developing countries to participate in the global knowledge economy and to support researchers in developing countries in creating and developing new solutions to technical challenges faced on a local and global level. aRD*i* offers access to over 25,000 peer-reviewed scientific and technical journals and e-books, with over 550 user institutions registered at the end of 2015. For more information please consult the aRD*i* website (www.wipo.int/ardi). aRD*i* is a member since 2011 of the Research4Life (R4L) partnership, which includes the World Health Organization's (WHO) HINARI program focusing on biomedical and health journals, the Food and Agriculture Organization of the United Nations (FAO)'s AGORA program for agriculture based journals, and the United Nations Environment Programme (UNEP)'s OARE program on environmental issues.

Access to Specialized Patent Information (ASPI)

18. The Access to Specialized Patent Information program is similarly a public-private partnership with the world's major commercial patent database vendors, and provides access to more advanced and sophisticated search and analysis tools for use by institutions in LDCs. The number of institutional users is also steadily increasing to over 50. For more information please see the ASPI website (www.wipo.int/aspi).

19. Patent Landscape Reports (PLRs) provide a comprehensive overview and analysis of the innovation and patenting activity in a specific technological field, globally or in a specific geographical area. The results are presented and analyzed in a comprehensive manner and are visualized through graphs and statistics with the help of various analytical tools. New patent landscape reports were published in 2014 on Animal Genetic Resources, Selected Neglected Diseases and on Assistive Devices for Visually Impaired Persons, the latter also produced in an accessible format for print disabled persons. The reports were presented to Member States at promotional events with additional infographics summarizing the key findings of these reports. Two new patent landscape reports were drafted in 2015 on Technologies Related to Palm Oil Production, Waste Treatment and Exploitation, and on Technologies Related to Algae, in response to specific requests and needs of Member States working in these technologies. Moreover, Guidelines for Preparing PLRs were published in August 2015, while a Manual on Open Source and Free Tools for Patent Analytics has been finalized and will be published in early 2016. Further details on all aspects of PLRs can be found at:

http://www.wipo.int/patentscope/en/programs/patent_landscapes/index.html

20. Next to the establishment of organizational structures offering capacity building and support services promoting technology transfer, WIPO provides on demand to its Member States also specific data which supports technology transfer-related decisions. Patent Landscape Reports (PLRs) provide an overview of innovation trends, patenting activity, key players, and the geographical distribution of patent protection in a specific technological field, globally or in a specific geographical area. The analysis in the report also includes information about emerging trends in technologies, major and emerging players in the field, distribution of patent filings among academia, research institutes and private sector, as well as cooperation networks between applicants and inventors, public and private sector. The

results of the reports are presented and analyzed in a non-expert friendly way and are visualized through graphs and statistics with the help of various analytical tools. The information included in the reports, mainly on emerging technologies, potential market and partners provides the input for decision making related to technology acquisition and technology transfer.

21. Examples of WIPO Patent Landscape Reports which contributed to discussions related to technology transfer in the period 2014-2015 include the Patent Landscape Reports on E-waste Recycling and Material Recovery, prepared in cooperation with the Basel Convention Secretariat. The report findings were used for joint UN Agencies discussions on e-waste management in Latin America, resulting in a joint UN publication in May 2015 (the International Telecommunication Union (ITU), Basel Convention, UNEP, the United Nations Educational Scientific and Cultural Organization (UNESCO), the United Nations Industrial Development Organization (UNIDO), WIPO, UNU, BCRC-South America, ECLAC, WHO. The publication includes various aspects of the topic, among others availability of related technologies and opportunities for technology transfer and is available in Spanish and English (the report is available at: http://www.itu.int/dms_pub/itu-t/oth/0b/11/T0B110000273301PDFS.pdf).

22. Another example is the Patent Landscape Report on Animal Genetic Resources for Food and Agriculture, in cooperation with FAO. The report explored the research focus areas related to animal genetic resources for food and agriculture. The findings of the Patent Landscape Report showed that the main identified technologies were focused on medical and pharmaceutical market. The report findings fed into FAO's Second Global Assessment of Animal Genetic Resources (accessible at <http://www.fao.org/3/a-i4787e.pdf>). Among the key findings of the latter report was that "emerging technologies are creating new opportunities in animal genetic resources management".

23. A further patent landscape report published in the period 2014-2015 was the Patent Landscape Report on Assistive Devices for Visually Impaired Persons, also produced in an accessible format for print disabled persons. The latter report intended to facilitate the identification of available assistive devices and technologies which could provide various stakeholders knowledge of available solutions, allowing for better negotiations in acquisition of technology, technology and know-how transfer discussions. All the aforementioned reports were presented to Member States at promotional events with additional infographics summarizing the key findings of these reports. Two new patent landscape reports were drafted in 2015 on Technologies Related to Palm Oil Production, Waste Treatment and Exploitation, and on Technologies Related to Microalgae, in response to specific requests and needs of Member States working in these technologies. Moreover, Guidelines for Preparing PLRs were published in August 2015 at: (http://www.wipo.int/edocs/pubdocs/en/wipo_pub_946.pdf), while a Manual on Open Source and Free Tools for Patent Analytics has been finalized and will be published in early 2016. Further details on all aspects of PLRs can be found at: http://www.wipo.int/patentscope/en/programs/patent_landscapes/index.html.

V. DEVELOPMENT OF HUMAN CAPITAL – CAPACITY BUILDING PROGRAMS

24. Lack of human capital with necessary inter-disciplinary professional skills able to support innovation and knowledge transfer systems, was identified as a major gap between developed and developing countries, in proportion to their innovation outputs and results.

25. In response to this need, WIPO developed very practical, experience based capacity building programs for scientists, researchers, technology managers, students and others involved in the innovation processes or are part of organizations and services that are

supposed to support those processes – such as policy makers and funders, or to act as intermediaries – IP related professionals engaged in knowledge transfer processes.

26. The approach was that the objective was not to create IP legal experts, but inter-disciplinary professionals with different background who would be able to identify knowledge transfer opportunities and risks, to propose adequate knowledge and IP management options and procedures and to recognize the need when other experts – such as patent attorneys and IP lawyers, should be involved in one of the innovation cycle activities.

27. Training programs are mostly based on specific Manuals, WIPO publications and documents which are conceptualized to be made available and licensed to interested developing countries for educational purposes, and on the principle of “open source” – with the obligation to “grant back” all the improvements of materials to WIPO.

28. In the creation of essential programs, that were later made available in different variations for specific target audiences and stockholders, we followed the path of the idea from its inception to the market and created following pillar trainings in knowledge management teaching for universities:

(a) *Patent Drafting Trainings* – focusing on enhancing skills and techniques in drafting patent applications in order to support the use of the patent system by local inventors. The main attendees of those trainings were professionals in technology transfer offices and TISCs, technology managers as well as IP practitioners from developing countries with a view to providing solid advice to local inventors to protect their inventions. The face-to-face trainings were delivered in English, French, Spanish and Portuguese, on the basic and advanced levels, with follow-up on-line exercise and mentoring work. The theoretical reference of the program is the Patent Drafting Manual (WIPO Publication No. 867) and Draft Strategic Patent Drafting Exercise Book. In 2014–2015, WIPO delivered Patent Drafting trainings in nine countries (Brazil, Chile, Colombia, Ecuador, Indonesia, Sri Lanka, Thailand, Tunisia and Viet Nam) and for the Member and Observer States of the African Regional Intellectual Property Organization (ARIPO);

(b) *Successful Technology Licensing (STL)* – the Program was created to assist LDCs, developing countries and countries in transition to develop human capital with necessary competences in the areas relevant for knowledge / technology transfer – such as using a licensing agreement as a tool for IP collaboration and transfer of technology, understanding key terms of a licensing agreement and negotiation techniques, as well as learning how to draft the agreement (advanced STL course). For the training purposes the STL, a Training Kit was developed, containing the Successful Technology Transfer (STL) Guide (WIPO publication 903 E - reviewed and new edition issued in 2015 with the new Chapter V on *Understanding Certain Antitrust Concerns Related to Technology Licensing*), with a standard model of the program for basic and an advanced course, standard presentations and set of hypothetical stories. This training kit is available for universities and PROs for licensing, on the “open source” principle. In the last biennium the STL course was organized, at basic and advanced levels, as national and regional events in the following countries: Brazil, Italy (LLM Course on IP Law, with sponsored participants from developing countries), Indonesia, Mexico, Philippines, Singapore (video conference for National University of Singapore), Turkey and in France where the WIPO Academy, in collaboration with the Centre for International Intellectual Property Studies (CEIPI) in Strasbourg, and the French IP Office, WIPO developed a new Advanced Training Course “Technology Transfer, Licensing and Development”, that was launched in CEIPI premises in Strasbourg on June 22 to 27, 2014 and attended by 22 participants from developing

countries. In addition a number of one-day “mini STL courses,” were organized in Geneva, in collaboration with WIPO and the World Trade Organization (WTO) for policy makers and IP teachers.

(c) *IP Valuation* – Determining the value of the research results in the process of IP commercialization is one of the greatest challenges for scientists and technology managers in most developing and countries in transition. In the framework of the implementation of DA Recommendation 10, WIPO developed two complementary guides – Practical Guide for Valuing Intangible Assets in Research and Development Institutions, focusing on qualitative methods of valuation in pre-commercialization phase, and an IP Valuation Training Kit for Academic Institutions, addressing issues related to IP valuation in IP commercialization of research results – through licensing or establishment of start-up based on technology developed in university. A model program was also created, with flexibilities related to specific needs of target audiences and with a general vision that 30 – 50 per cent of the course should be devoted to monitored, practical exercises, based on real or hypothetical technologies developed in local research organizations. In the 2014–2015 biennium, WIPO delivered the following IP valuation courses:

1. IP Valuation Course in the framework of UC Davis Licensing Academy, organized in collaboration with PIPRA and UC Davis for technology managers, including from developing countries, June 4 to 10, 2014, UC Davis, United States of America;
2. WIPO / FIT Australia IP Valuation Workshop, June 9 to 12, 2014, Jakarta, Indonesia;
3. WIPO Roving Seminar on IP Valuation and Technology Transfer for Universities, December 2 to 4, 2014, Klaipeda and Kaunas, Lithuania;
4. WIPO/PIPRA/UC Davis IP Valuation Course, UC Davis Licensing Academy, June 29, 2015, UC Davis, California, United States of America; and
5. WIPO Sub – Regional IP Valuation Workshop, October 21 to 23, 2015, Sibiu, Romania.

(d) *IP Marketing and Valuation* – Newly created program in 2015, in response to requests of numerous research institutions facing challenges on how to market early stage technologies, how to identify the most appropriate collaborative or market partners, how to communicate information concerning technologies identified as commercially valuable and available for commercialization. Currently training is available as a three or four-day program, where examples and exercises are created around real technologies, developed in local universities or research institutions. In 2015, this training was organized in Brazil (in the context of an advanced STL course), Philippines, and Serbia.

29. Capacity building programs were organized as well for specific scientific audiences, dealing with narrow scientific domains and knowledge transfer such as transfer and commercialization of research results related to neglected diseases and public health:

- WIPO IP Management and Training Workshop. New York, United States of America. November 4, 2014, for senior researchers and scientists from developing country institutions that are Members of WIPO Re:Search;
- WHO, WIPO, WTO Joint Symposium on *Innovation and Access to Medical Technologies – Challenges and Opportunities for Middle-Income Countries*. Geneva, Switzerland. November 5, 2014;

- *COHRED Global Forum on Research and Innovation for Health 2015*, Manila, Philippines, August 24 to 27, 2015.
- WHO, WIPO, WTO Joint Symposium on *Public Health, Intellectual Property, and TRIPS at 20: Innovation and Access to Medicines; Learning from the Past, Illuminating the Future*, Geneva, Switzerland. October 27 2015.

30. The WIPO Academy created a special program on technology transfer for WIPO South Africa Summer School, which is organized on an annual base in Durban, South Africa on November (2014 and 2015), for predominantly developing country's professionals. The one day training on technology transfer and licensing is also incorporated in the WIPO / WTO Colloquium for Teachers of IP, that jointly provided by the two Organizations in Geneva, yearly (June 2014 / June 2015). For the government officials and policy makers from developing countries the topic is included in the WIPO / WTO Advanced Trade Policy Course, in Geneva, usually organized two to three times per year (in 2014 trainings took place in February and October, and in 2015 the course was organized in February, July and November 2015).

31. Through collaboration of Academy with various academic institutions WIPO also became a partner in creation of Master Courses (LLM) on Intellectual Property, where participation of students from developing countries is mainly sponsored by WIPO. Issues related to knowledge / technology transfer are included in the curricula of those LLM courses in a different forms, mostly combination of theoretical part and practical exercise related to use of IP in this context. Such programs are developed in cooperation with the University of Turin (Turin, Italy), Africa University (Mutare, Zimbabwe), Queensland University of Technology (Brisbane, Australia) and Austral University (Buenos Aires, Argentina), and are available on annual bases, with scholarship for participants from LDCs, developing and countries in transition.

VI. CREATION OF TOOLS, GUIDES / MANUALS AND TRAINING MATERIALS

32. Most WIPO guides and manuals are developed to be used in specific training programs, as indicated in the chapter on Capacity Building Programs. WIPO developed the following manuals:

- WIPO Patent Drafting Training Kit – Containing WIPO Patent Drafting Manual WIPO Publication no. 867 - http://www.wipo.int/edocs/pubdocs/en/patents/867/wipo_pub_867.pdf), model of standard program and set of presentations aligned with the content of the Manual. Materials are available in English, French and Spanish;
- Patent Drafting Exercise Book – Material developed based on the DA Recommendation 10, currently available in the draft form and under review and expected to be soon available on WIPO Knowledge Transfer web – page;
- Successful Technology Licensing (STL) Training Kit – It is strategically developed as a combination of the basic theoretical STL Manual, standard programs for basic, advanced and train the trainers course. The manual was first created in 2007, and issued in English and French as WIPO publications 903 E and 903 F), translated in 8 other languages (*Spanish, Arabic, Russian, Chinese, Portuguese, Serbian, Vietnamese and Romanian*), in 2014 reviewed in order to include reference to competition law and licensing. Currently is available as a new edition of WIPO publication 903E, with additional Chapter V *Understanding Certain Antitrust Concerns Related to Technology Licensing*. http://www.wipo.int/edocs/pubdocs/en/licensing/903/wipo_pub_903.pdf;

- IPR Management “Tool Box” for Universities - With the support of the Funds-in-Trust of the Government of Australia WIPO developed in 2014 a “Tool Box” for universities containing models of IP Institutional Policy and Technology Transfer Contracts that research institutions most frequently negotiate and sign. Each model is accompanied by the guide and instructions regarding content, process of negotiation and drafting of the contract. Soon will be available on the WIPO Knowledge Transfer web page;
- Practical Guide for Valuing Intangible Assets in Research and Development Institutions (CDIP document);
- IP Valuation Training Kit for Academic Institutions (CDIP document);
- IP Audit Tool – WIPO Publication 927, on issues to be addressed in an IP audit process on the national and institutional level when developing an IP strategy http://www.wipo.int/edocs/pubdocs/en/intproperty/927/wipo_pub_927.pdf;
- IP Asset Development and Management: A Key Strategy for Economic Growth, WIPO Publication 896 on essential elements of IPR management - http://www.wipo.int/edocs/pubdocs/en/intproperty/896/wipo_pub_896.pdf
- Exchange Value – Negotiation Technology Licensing Agreements – Practical training material, available as WIPO publication 906E http://www.wipo.int/export/sites/www/sme/en/documents/pdf/technology_licensing.pdf.
- *WIPO GREEN case study: Green Technology Diffusion: The Case of Ecosan Waterless Toilets* http://www.wipo.int/edocs/pubdocs/en/wipo_pub_951_6.pdf
- *WIPO GREEN case study: Green Technology Diffusion: The Case of Arivi Paraffin Cookstoves*, http://www.wipo.int/edocs/pubdocs/en/wipo_pub_951_5.pdf
- Global Challenges Report by S. Helm, Q. Tannock and I. Iliev, 2014. *Renewable Energy Technology: Evolution and Policy Implications—Evidence from Patent Literature*; http://www.wipo.int/export/sites/www/policy/en/climate_change/pdf/ccmt_report.pdf
- Global Challenges Report by Kristina M. Lybecker and Sebastian Lohse, 2015. *Innovation and Diffusion of Green Technologies: The Role of Intellectual Property and Other Enabling Factors*; https://webaccess.wipo.int/wipogreen/en/pdf/global_challenges_report_lybecker_lohse.pdf
- Global Challenges Brief: *When policy meets evidence: What’s next in the discussion on IP, technology transfer & the environment?*, http://www.wipo.int/export/sites/www/policy/en/climate_change/pdf/global_challenges_brief.pdf
- Global Challenges Brief: *The acceleration of climate change and mitigation technologies: Intellectual property trends in the renewable energy landscape*; http://www.wipo.int/export/sites/www/policy/en/climate_change/pdf/ccmt_brief.pdf
- Global Challenges Brief: *Incentivizing the adoption of green technology on a global scale* (http://www.wipo.int/export/sites/www/policy/en/climate_change/pdf/wipo_lohse_brief.pdf)
- In addition to existing manuals, for each training program WIPO developed customized training materials, focusing on local case studies and practical exercises, often translated in the language of the host country and addressing IP issues in relation to specific topics or areas as indicated in the different programs – such as negotiation of licensing agreement regarding technology on application of IT in life science.

VII. WIPO STANDING COMMITTEES ADDRESSING TECHNOLOGY TRANSFER ISSUES

33. Since the 14th session of the Standing Committee on the Law of Patents (SCP) held in January 2010, an item entitled “transfer of technology” has been included in the agenda of the Committee. Under that agenda item, discussions were held on the preliminary study on transfer of technology (documents SCP/14/4 and 4 Rev.), and since May 2012, Member States have been sharing information on practical examples and experiences regarding patent-related incentives and impediments to transfer of technology.

34. In addition, on the margin of the 17th session of the SCP held in December 2011, a special seminar on patents and transfer of technology was organized by the WIPO Chief Economist.

VIII. WIPO FACILITATED COLLABORATIONS IN SPECIFIC AREAS OF KNOWLEDGE / TECHNOLOGY TRANSFER – WIPO Re:Search

35. WIPO Re:Search developed over 50 collaborations during 2014 and 2015 that include the transfer of technologies from companies or universities for the development of drugs, vaccines and diagnostics on neglected tropical diseases, malaria and tuberculosis. A number of collaborations included institutions in developing countries.

36. One of examples of such collaboration, between academic and business institutions, in developing and developed countries is the cooperation realized between University of Lagos and NIPD Genetics LTD, a privately held spinoff from the Cyprus Institute of Neurology and Genetics in the field of cell-free DNA and non-invasive genetic testing. NIPD will host University of Lagos researcher to identify resistance to anti-malarial drugs using dry blood spots from Nigerian malaria patients treated with anti-malarial. Further, collaboration will continue between University of Lagos and Novartis, which will assess the feasibility of using dried blood spot sampling (DBSS) and next generation sequencing of Plasmodium falciparum in malaria patients in Nigeria.

37. Other examples include:

(a) a collaboration between the University of British Columbia (Canada) and Lagos University. A UBC researcher provided a University of Lagos researcher with an antibody against a human host protein. The University of Lagos researcher will use the antibody to examine the effect of reducing the level of the host protein on the severity of malaria. At the same time, a University of Lagos researcher provided a UBC researcher with serum, plasma, and urine samples from patients with severe malaria and asymptomatic malaria, as well as samples from healthy controls. The UBC researcher will use proteomics to ascertain whether these samples have differing protein profiles, which could be used to identify biomarkers for a malaria diagnostic;

(b) the Centre Pasteur du Cameroun provided the University of Stanford with approximately 250 samples from non-malarious febrile patients from Cameroon. Stanford University used the samples to design a fever multiplex diagnostic best suited for Cameroon; and

(c) Researchers from IP Tunis will be utilizing the preclinical services program of the National Institute of Allergy and Infectious Diseases (United States of America) to increase thermostability of rabies vaccine.

38. In the framework of IP and global challenges issues, WIPO was also partnering with public and private institutions - business and academic organizations, in the organization and contribution to the forums that had as an objective facilitation of matchmaking between technology providers and technology seekers, in particular concerning environmentally clean technologies, as it was the case in following forums:

- 4th Creative Industries and Emerging Technologies Fair & International Design Conferences. Istanbul, Turkey, February 19 to 21, 2015. 200 participants, where WIPO participated as part of *Entrepreneurship and Investment Panel* and also had a booth at the fair to promote the WIPO GREEN database.
- Regional Seminar and Matchmaking Event: Facilitating the Transfer and Diffusion of Clean Technology: Opportunities from a Pilot Project on Wastewater Treatment in South East Asia, Manila, Philippines, April 23 and 24, 2015. 100 participants. The event was preceded by needs assessment in Indonesia, Philippines and Vietnam on wastewater treatment technologies. The event resulted in the signing of 16 letters of intent between technology providers and technology seekers to negotiate technology transfer.
- Global South-South Development (GSSD) Expo. Washington, D.C., November 17 to 20, 2014. 120 participants. WIPO led one of the eight scaling-up sessions, session featuring successful partnerships and solutions in the field of green technologies, with panelists drawn from the WIPO GREEN network;
- What is Next with Public-Private Partnerships in Green Technology Dissemination? Organized by INPI France in collaboration with WIPO, December 9, 2015. 30 participants. The event, which was well received, was held on the sidelines of COP21, and featured 60 companies (30 from developing and 30 from developed).

IX. WIPO PARTICIPATION IN RELEVANT KNOWLEDGE TRANSFER FORUMS

39. All efforts aimed at identifying the most successful model of innovation and knowledge transfer for the benefit of society, including WIPO Global Innovation Index Reports, showed the great importance and impact of created preconditions (inputs) in different areas such as institutions, infrastructure, human capital, sophistication of businesses and market etc. in order to be able to harvest good results in technology based innovation or creative industries.

40. Therefore, WIPO created a network of partners able to provide complementary services relevant for knowledge transfer that goes beyond IP such as a network of partnerships with the United Nations (UN) and other international and regional governmental organizations (such as the UN Economic Commission for Europe (UNECE), the UN Conference on Trade and Development (UNCTAD), the UN Framework Convention on Climate Change (UNFCCC), the European Organization for Nuclear Research (CERN), the World Bank, the Joint Research Center (JRC) of the European Commission (EC), the International Atomic Energy Agency (IAEA), etc.), professional associations (the Licensing Executives Society International (LESI), the Association of University Technology Managers (AUTM), ASTP, ASTPPROTON Knowledge Transfer Europe) and academic institutions in developing and developed countries (the Center for Intellectual Property (CIP) of Chalmers University, the Centre for International Intellectual Property Studies (CEIPI) in Strasburg, Bogaziçi University, Istanbul, Turkey.

41. WIPO also participated in a number of international and regional meetings of universities and their technology management associations such as:

- Annual meetings of the “TTO Circle”, a network of technology management units of the 25 largest research institutions in Europe, organized by EC JRC (JRC) to assess the impact on European policies (January 20 and 21, 2014, Rehovot Israel);
- International Conference on IP@University, organized by Bogaziçi University, Istanbul, Turkey (2014 and 2015);
- Third Congress of the Mexican Technology Transfer Offices Network’s (Red OTT), on November 26 and 17, 2014 in Querétaro, Mexico;
- Global Challenges Seminar, launching the Global Challenges Brief and Report by CambridgeIP on Intellectual property trends in the renewable energy landscape (June 11, 2014); and
- Danube Initiative Summer School, organized by JRC and WIPO for technology managers from Danube Region Countries (Belgrade 2014 and Budapest 2015).

42. In addition, through activities of External Relations WIPO provided contribution or participated in numerous meetings of other governmental and non-governmental organizations as it was the case of following meetings:

- Joint Side Event on Climate Change and Technology - Global Environment Facility 5th Assembly, May 27, 2014;
- 21st session of the Intergovernmental Council of the International Hydrological Programme (IHP), UNESCO, Paris, June 18 to 20, 2014;
- 3rd International Conference on Water Resources and Environmental Management (ICWRE-2014), Antalya, May 13 to 15, 2014;
- WIPO side event with IHP UNESCO at the *World Water Week*, Stockholm, August 31 to September 6, 2014;
- Joint UNU-ITU-UNIDO-ECLAC-WIPO-UNEP Basel Convention Event on 1st Global E-waste Monitor and the Specific Situation in Latin America held in Geneva on May 11, 2015, during the Meetings of the Parties to the Basel, Rotterdam and Stockholm Conventions (BC COP12, RC COP7, SC COP7).
- WIPO Side Event on Policies and Evidence to Support Climate Change Technology Transfer and Innovation – UNFCCC Bonn Climate Change Conference, June 8, 2015;
- WIPO participation in IRENA Side event on IRENA’s Interactive Web Tool on International Standards and Patents in Renewable Energy – UNFCCC Bonn Climate Change Conference, June 5, 2015;
- WIPO participation in workshop on “Strengthening national systems of innovation in developing countries, covering the entire technology cycle for climate technology” - UNFCCC TEC Workshop, October 13 and 14, 2014;
- WIPO/IRENA Side event on Renewable Energy Technologies: Technology Trends, Patents and Policy Implications – UNFCCC Bonn Climate Change Conference, June 13, 2014.

X. ECONOMIC RESEARCH AND STUDIES ON POLICIES AND OUTCOMES OF TECHNOLOGY TRANSFER

43. Through its economic flagship publications such as the Global Innovation Index or the World IP Report, the Economics and Statistics Division (ESD) is led to study the extent and outcomes of knowledge transfer activities and policies. In 2011, Chapter 4 of the World IP Report was fully devoted to this topic. Every year, the Global Innovation Index assesses the extent and importance of innovation linkages for innovation in one of its innovation index pillars. For the 2016/17 biennium, ESD was asked to conduct a comparative research project in six countries to assess knowledge transfer policies and outcomes. An integral part of this project is to produce a set of key metrics and survey templates which could be used by countries to monitor activities and outcomes in this field.

[End of Annex and of document]