



Ethics Assessment in Different Countries

China

Xin Ming, David Douglas, Agata Gurzawska, Philip Brey

University of Twente

June 2015

Annex 4.b

Ethical Assessment of Research and Innovation: A Comparative Analysis of Practices and Institutions in the EU and selected other countries

Deliverable 1.1

This deliverable and the work described in it is part of the project *Stakeholders Acting Together on the Ethical Impact Assessment of Research and Innovation - SATORI* - which received funding from the European Commission's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 612231



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1 Introduction

The aim of this report is to analyse the existing structures and agents for the ethical assessment of research and innovation in China, both for the public and the private sector. The report will analyse how the national government has put into place organisational structures, laws, policies and procedures for ethical assessment, how both publicly funded and private research and innovation systems address ethical issues in research and innovation, and how ethical assessment plays a role in the activities of professional groups and associations for research and innovation and of civil society organisations (CSOs).

We will begin with some basic information about China and the historical development of ethics assessment institutions in the country. China is the often used abbreviation of the People's Republic of China (PRC). Its capital is Beijing and the official language is the Chinese language. Despite various dialects, over 70% Chinese people speak standard Chinese which is also known as Mandarin. The Gross Domestic Product (GDP) of China in 2011 was USD 13,482,080.05 million. China is a populous country. It had 1,347,350 thousand inhabitants in 2011.¹ It is a single-party state governed by the Communist Party of China (CPC).

China's socialist market economy is the world's second largest economy by nominal GDP.² It is the world's fastest-growing major economy, with growth rates averaging 10% over the past 30 years. It is a global hub for manufacturing, and it is the largest manufacturing economy in the world as well as the largest exporter of goods. In 2011, the gross domestic expenditure on research and development (GERD) was USD 247,808.3 million, which amounted to 1.84% of GDP.³ Major industries in China include mining and ore processing, metallurgy, machinery, armaments, textiles and apparel, chemicals, food processing, transportation equipment, consumer products such as toys and electronics, and telecommunications & information technology. In 2011, the percentage of GERD financed by government was 21.68%, financed by industry was 73.91%, and financed by abroad was 1.34%. Moreover, 75.74% of GERD was performed by the business enterprise sector, 7.93% by the higher education sector and 16.33% by the government sector.⁴

The practice of ethics assessment of research and innovation in China is relatively centralised and led by the government. In China, all the important research organisations, including universities, hospitals and research associations, are affiliated with the government; they have research freedom and independence to some extent but the governmental policies, decisions and regulations play very important roles in the general research and innovation activities. In the central government, different subordinate bodies such as ministries play roles in ethics assessment in their own field. They implement the ethics assessment by both performing the assessment themselves and by issuing relevant laws, guidelines, policies and regulations. In addition, several governmental bodies also collaborate on R&D integrity issues. Ethics assessment and guidance on some major scientific or engineering issues, such as the bio-safety of genetic modified organisms, also require an inter-ministry mechanism. In research associations and other research-performing institutions such as universities and hospitals, there are also sectors assessing and guiding ethics-related issues in research and innovation. These sectors often exist in the form of ethics committees composed by professionals whose expertise is often in a relevant scientific field or in ethics. In the private sector, the major focuses are on

¹ OECD MSTI database, 2011 figures.

² <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2078rank.html>

³ OECD MSTI database, 2011 figures.

⁴ OECD MSTI database, 2011 figures.

environmental protection and corporate social responsibility. The industry and enterprises perform corporate social responsibility and publish their own CSR reports. The reports are studied by government-affiliated public research institutions and the results are made public to society. The non-profit sector also engages in ethics assessment with their limited power, and their influence is becoming stronger.

For political reasons, the Chinese economy only started to increase remarkably at the end of the last century. The awareness of ethics in research and innovation also comes relatively recently. China begun the process of developing an ethics assessment structure from the beginning of the 21st century and this process is still continuing. A mature and complete ethics assessment structure is yet to be established. However, China paid attention to environmental protection as early as 1979, when the first law on environmental protection was issued as a temporal law for trial implementation. After ten years, this law was revised and officially published as a national law. Several other laws on environmental protection were also issued in the following years.

Before 2000, the focus of research ethics was mainly on some specific scientific and engineering issues such as genetic engineering. In the last five years of the 20th century, science ethics committees were set up in two major Chinese national research associations, namely the CAS (1996) and CAE (1997). In addition, medical ethics also started to develop before the 21st century, when some medical educational institutes offered courses about medical ethics, a subordinate society on medical ethics was launched (1988) in the biggest Chinese medical association (CMA) and some rules addressing ethical principles in medical research were issued (1998). Generally speaking, however, ethics assessment in research and innovation was underdeveloped in China before the 20th century, although this has changed remarkably in the new century. Since the start of 21st century, issues about R&I ethics have received greater consideration. Ethics assessing committees have been created in governmental bodies implementing research and innovation and in most research institutions. The government, with its assorted ministries and affiliated institutes, addresses the importance of ethics in research and innovation, and more laws and regulations are published. At the same time, in private research and innovation systems, mainly within industry and enterprises, ethics-related issues also receive more importance. Following the initiatives of the government which began at the beginning of the 21st century (2005 to 2006), more and more corporations put more effort in sustainable development and corporate social responsibility. Additionally, civil society organisations have also developed rapidly in recent years and play an increasingly important role in the ethics assessment and guidance.

Please note: All the English translations of Chinese names of institutions, organisations, laws, regulations, and other terminologies are officially or conventionally used except for those with special remarks. The original names in Chinese, if required, are in the footnotes.

2 National government institutions and policies

This chapter will provide a discussion of Chinese national government institutions and policies relating to research and innovation. It examines: the general institutional structure of Chinese government and government-controlled institutions; governmental institutions with a role in ethics assessment; and national laws and policies for ethics assessment.

2.1 General institutional structure

In this section, the general institutional structure of Chinese government and government-controlled institutions, as it relates to research and innovation, will be presented. The following topics will be included in the discussion: the form of government; the nature of and relations between executive, the legislative and judicial branches; the major ministries and government organisations; and the role of government in research and innovation in the private sector.

General structure of government

The People's Republic of China (PRC) was founded in October 1949. It is a constitutional republic ruled by the Communist Party of China (CPC). According to the constitution, the fundamental system of China is the socialist system and all rights belong to the people. China has a system of multi-party cooperation and political consultation, which operates under the leadership of the CPC. The power of the country is concentrated in the Paramount Leader, who is leader of the CPC and the Central Military Commission, and also the President of the PRC. Chinese political power is exercised at the central level (national) and local level (provincial, county, and village). Provincial political power is appointed and supervised by the central government.

The highest executive power of China is held by the State Council which by the constitution is the same as the Central People's Government. It includes a Premier and heads of governmental departments and agencies, and they constitute the Chinese cabinet. Currently, there are 35 members in the council including a Premier, four vice premiers, state councillors, ministers and chairs of major agencies, the Auditor General and the Secretary General of the State Council. The State Council interlocks with another two branches of power, namely the CPC and the People's Liberation Army and it directly supervises People's Governments in each province and autonomous region.

The highest legislature of China is the National People's Congress (NPC). It is a unicameral legislature with currently 2,965 members (by 2015). The NPC has power in proposing and approving legislation, overseeing the operations of governments and electing major officers. The NPC has annual conferences every spring for representatives to review past policies and to make future plans for the country. The delegates of the NPC are elected through a multi-tiered representative electoral system. At the local level, committee members are directly elected and these members will vote for the higher levels, up to the national level.

The judicial power of China is implemented in the People's Court system which is based on civil law system. The court system follows the leadership of the CPC and has four central-local levels. The highest is the Supreme People's Court (SPC).⁵ In addition, the Central Political and Legal Affairs Commission of the CPC,⁶ which supervises all legal enforcement powers, and the Supreme People's Procuratorate⁷ which has responsibility in prosecution and investigation, together with the SPC, comprise the national judiciary system of China.

⁵最高人民法院

⁶中央政法委

⁷最高人民检察院

Government organisations relevant to research and innovation

The State Council Research Office,⁸ which is the administrative office within the State Council, has the organisation of Department of Education, Science, Culture & Health.⁹ This department is responsible for research in important projects regarding science and technology and advises State Council which coordinates tasks among all ministries.

The Ministry of Education (MOE)¹⁰ is responsible for arranging and directing research by higher education institutions in all subjects including natural sciences and social sciences. It coordinates higher education institutions in developing the national innovation system and carrying out important programs and projects for the progress in science and technology. Moreover, the Ministry of Education also guides the arrangement and development of scientific and technological innovation of institutions and higher education. These tasks are mainly conducted by the Department of Science and Technology.¹¹ One important R&I-related institution in the system of MOE is the Ministry of Education, Science and Technology Development Center,¹² which organises research funds in higher education and helps to popularise and promote application of scientific discovery and technological invention.¹³

The Ministry of Science and Technology (MOST)¹⁴ takes the lead in making S&T development plans and policies. MOST organises demonstrations, assessment, acceptance and policy making of major S&T projects and provides advice. It also makes proposals on institutional innovation and oversees the establishment and restructuring of research institutes. Like the MOE, the MOST encourages and helps enterprises, universities and research institutes in promoting applications and enterprises in improving the innovation capacity. In addition, the MOST is also responsible for budgeting and supervising of funds related to S&T projects.¹⁵

Furthermore, other ministries such as the Ministry of Transport,¹⁶ the National Health and Family Planning Commission,¹⁷ the Ministry of Water Resources,¹⁸ the Ministry of Agriculture,¹⁹ the Ministry of Environmental Protection,²⁰ the Ministry of Industry and Information Technology²¹ and the Ministry of Land and Resources²² all have specific research policies for respective branches. The central-local system of the government is a multi-tiered: local commissions are led by corresponding commission on a higher level and central ministries are the highest.

⁸国务院研究室

⁹教科文卫研究司

¹⁰教育部

¹¹http://www.moe.gov.cn/publicfiles/business/htmlfiles/moe/moe_2797/200907/49988.html

¹²教育部科技发展中心

¹³http://www.cutech.edu.cn/cn/jgsz/A0101index_1.htm

¹⁴科学技术部

¹⁵<http://www.most.gov.cn/eng/organization/Mission/index.htm>

¹⁶交通运输部

¹⁷国家卫生和计划生育委员会

¹⁸水利部

¹⁹农业部

²⁰环境保护部

²¹工业和信息化部

²²国土资源部

2.2 Governmental institutions for ethics assessment

This section looks at Chinese national governmental and government-funded bodies that have a role in ethics assessment (e.g., in terms of setting standards, or providing advice to government) and related areas (e.g., technology assessment, or impact assessment). Some institutions are subordinate units of the central governmental ministries, so they will be also included here and not (only) in chapter 3.

Ministries and subsidiary bodies

- The National Health and Family Planning Commission (NHFPC) is responsible for drafting laws and regulations for health and family planning. It also draws up a science and technology development plan for health and family planning, and performs related scientific research programs.²³ Its predecessor, the Ministry of Health,²⁴ has made remarkable efforts to promote a committee in hospital ethics. In 2008, it issued the *Guidelines for Hospital Management Evaluation*²⁵ (2008 edition), in which it asks for the establishment of medical ethics committees along with other medical quality administrative organisations in hospitals. This guideline also articulates that medical technology and service should comply with medical ethics principles, so does the use of medical technology in research programs.²⁶ The former Ministry of Health led or participated in the drafting of several laws and regulations on life science ethics as a basic legal framework for directing issues regarding ethical assessment and guide in fields of science and technology.
 - The Department of Science, Technology and Education²⁷ of the National Health and Family Planning Commission is responsible for in the administration of ethics in bio-medical research, especially human-related bio-medical research. Its major duties include implementing relevant scientific research projects, assessing and managing new related technologies, and supervising laboratory biosafety.²⁸
 - The Department of Law and Legislation²⁹ drafts health policies and standards and laws, regulations and rules.³⁰ In 2007, along with the former Ministry of Health and parallel departments, it issued the *Ethical Principles for Biomedical Research Involving Human Subjects*³¹ (2007 edition), guiding and regulating the ethical assessment of biomedical research in China. In April 2014, for reinforcing the ethical guide and assessment in biomedical research as well as guiding and specifying research activities, the Department of Law and Legislation along with the National Health and Family Planning Commission revised the Principle and consulted the public for advice.³²

²³http://en.nhfpc.gov.cn/2014-05/07/content_17491484.htm

²⁴卫生部

²⁵医院管理评价指南，2008 版

²⁶<http://www.moh.gov.cn/mohyzs/s3585/200806/36242.shtml>

²⁷科技教育司

²⁸http://en.nhfpc.gov.cn/2014-06/11/content_17534362.htm

²⁹法制司

³⁰http://en.nhfpc.gov.cn/2014-06/11/content_17537050.htm

³¹涉及人的生物医学研究伦理审查办法，2007 版

³²<http://www.nhfpc.gov.cn/zhuzhan/zqyj/201404/6a72194e617d4501aa9f17db7a3859bb.shtml>

- The Medical Ethics Expert Committee³³ is part of the National Health and Family Planning Commission. It was set up by the former Ministry of Health in March 2000, succeeding a former committee on the ethics regulation of human body-involved bio-medical research.³⁴ Its main responsibility is regulating activities related to medical technology, and advising and assessing ethical issues in technological development in the health industry.³⁵ The Department of Science, Technology and Education is responsible for the administration of this committee, which organises committee meetings and feasibility studies of major medical ethics decisions.
- The Ministry of Agriculture³⁶ is responsible for issues regarding Chinese agriculture and agricultural biotechnology. It also supervises and manages the bio-safety of agricultural GMOs in China. It issued the *Methods for the Safety Administration of Agricultural Genetic Engineering Projects*³⁷ in 1996, formulating the approving process, safety assessment and legal responsibility of agricultural genetic engineering projects. In 2001, the State Council issued the *Regulations on the Bio-safety Administration of Agricultural GMOs*³⁸, regulating the administering the bio-safety issues of agricultural GMOs in China. Following that, the Ministry of Agriculture issued five related regulations in regard to bio-safety evaluation and other aspects of managing GMOs.³⁹
 - A committee on the bio-safety of agricultural GMOs⁴⁰ was set up by the Ministry of Agriculture in 2002.
- The Ministry of Environmental Protection (MEP) deals with environment-related ethical issues. It plays a leading role in developing and arranging the implementation of national laws, policies and regulations for Chinese environmental protection. To prevent and control environmental pollution, it conducts environmental impact assessment on major economic and technical policies and programs and gives advice. Moreover, it guides and coordinates environmental publicity and communications work and thus promotes public participation in environmental protection.⁴¹
 - The Department of Science, Technology and Standards⁴² is responsible for environmental scientific and technological development and advances. Its Division of Environmental Standards⁴³ formulates the sciences and technology policies, plans, standards and norms for environmental protection. Its Division of Environment Health⁴⁴ organises research and other work on environmental issues related to human health.⁴⁵

³³医学伦理专家委员会

³⁴涉及人体的生物医学研究伦理审查委员会

³⁵<http://www.moh.gov.cn/zwgkzt/pkjjy1/200805/35740.shtml>

³⁶农业部

³⁷农业生物基因工程安全管理实施办法

³⁸农业转基因生物安全管理条例

³⁹<http://english.agri.gov.cn/aboutmoa/mandates/>; <http://www.agrogene.cn/info-106.shtml>

⁴⁰国家转基因生物安全委员会

⁴¹http://english.mep.gov.cn/About_SEPA/Mission/200803/t20080318_119444.htm

⁴²科技标准司

⁴³环境标准管理处

⁴⁴环境健康管理处

⁴⁵http://english.mep.gov.cn/About_SEPA/Internal_Departments/200910/t20091015_162425.htm
http://kjs.mep.gov.cn/zyzz/200910/t20091020_171321.htm

- The National Environment Advisory Committee⁴⁶, based in the Division of General Affairs⁴⁷ of the Department of Science, Technology and Standards was established in 2006. Its major tasks include researching important issues about national environmental protection and environmental problems, and advising on plans, regulations, laws and policies about environmental protection.⁴⁸
- The Department of Total Pollutants Control⁴⁹ works on achieving the national target on emission reduction by adopting various measures such as developing a total emission control system and operating an environmental protection target responsibility system.⁵⁰
- The Department of Nature and Ecology Conservation⁵¹ coordinates and supervises ecological conservation work. Its subordinate Division of Bio-safety Management⁵² undertakes the management of new bio-environmental technology.⁵³
- The Department of Environmental Impact Assessment⁵⁴ assesses the environmental impact of significant development plans, industries and regions according to national regulations as well as post-evaluates environmental impacts. It is also responsible for managing the qualifications of environmental impact assessment agencies.⁵⁵
- Additionally, many other the departments in the MEP have the power and obligation for ethics assessment and draw up related regulations. Such departments include: the Department of Pollution Prevention and Control⁵⁶ which supervises and manages the pollution prevention and control⁵⁷; the Department of Nuclear Safety Management⁵⁸ which oversees and administers nuclear and radioactive safety in China⁵⁹; the Department of Environmental Monitoring⁶⁰ which arranges environmental monitoring and the sharing of environmental information⁶¹; and the Bureau of Environmental Supervision⁶² is responsible for arrangement and enforcement inspection on major environmental issues.⁶³
- The Appraisal Center for Environment and Engineering (ACEE)⁶⁴ is an affiliated institution in the MEP. It is a major technical support institution in the field of Environmental Impact Assessment (EIA) for the MEP. It reviews the

⁴⁶国家环境咨询委员会

⁴⁷综合处

⁴⁸<http://kjs.mep.gov.cn/zxkwjwz/>

⁴⁹污染物排放总量控制司

⁵⁰http://english.mep.gov.cn/About_SEPA/Internal_Departments/200910/t20091015_162424.htm

⁵¹自然生态保护司

⁵²生物安全管理处

⁵³http://english.mep.gov.cn/About_SEPA/Internal_Departments/200910/t20091015_162418.htm

⁵⁴环境影响评价司

⁵⁵http://english.mep.gov.cn/About_SEPA/Internal_Departments/200910/t20091015_162422.htm

⁵⁶污染防治司

⁵⁷http://english.mep.gov.cn/About_SEPA/Internal_Departments/200910/t20091015_162419.htm

⁵⁸核安全管理司

⁵⁹http://english.mep.gov.cn/About_SEPA/Internal_Departments/200910/t20091015_162419.htm. Also called the Department of Radioactive Safety Management.

⁶⁰环境监测司

⁶¹http://english.mep.gov.cn/About_SEPA/Internal_Departments/200910/t20091015_162420.htm

⁶²环境监察局

⁶³http://hjj.mep.gov.cn/zyzzhnsjg/201407/t20140731_284269.htm

⁶⁴环境工程评估中心

Environmental Impact Statements of development plans and construction projects and gives following evaluations and suggestions. It also conducts research into EIA policies and methodologies as well as EIA information management and environmental modelling.⁶⁵

- The Ministry of Land and Resources is responsible for planning the protection and sustainable utilisation of natural resources such as land (especially cultivated land), mineral and marine resources in China. It arranges and works on the protection of geologically important sites and the geological environment as well as organises the supervision, prevention and mitigation of geological hazards, the overuse and contamination of groundwater and other natural resources.⁶⁶
- The Ministry of Science and Technology is responsible for promoting the progress of new technology especially high-tech development in China and for ensuring the technical safety. As early as 1993, then State Science and Technology Commission⁶⁷ which is the predecessor of the MOST issued *Rules for the Safety Administration of Genetic Engineering*.⁶⁸ It requires that all genetic engineering work conducted within Chinese territory must be authorised by the administrative authorities of the State Council.
 - The China National Centre for Biotechnology Development⁶⁹ is an affiliated organisation of MOST founded in 1983. It is responsible for the research and management of biotechnologies.⁷⁰
 - The Office for Human Genetic Resources Management of China⁷¹ drafts and issues rules and regulations for the management of genetic resources and bio-safety. It leads an expert committee to give the relevant technology assessment and advice. The daily organisation of this office is undertaken by the China National Centre for Biotechnology Development.⁷²
- The Ministry of Industry and Information Technology (MIIT) is responsible for the regulation and development of the Internet, communications, the promotion of the national knowledge economy, etc. and policies about the information industry. It develops and implements regulations and standards for issues in high-tech industries that concern biological medicine, new materials, aerospace, the information industry and so forth, while at the same time guiding technological innovation and progress in these fields. Though it has no explicit policy yet, MIIT emphasises the importance of privacy and information security in the development of communication and information industry.⁷³

Inter-agency mechanisms

- The inter-agency mechanism for building R&D integrity was set up in 2007 with six founders and is headed by the Ministry of Science and Technology. Its main responsibilities include: providing guidance for the building of R&D integrity in the

⁶⁵<http://www.china-eia.com/en/>.

⁶⁶http://www.mlr.gov.cn/mlrenglish/about/mission/200710/t20071015_656461.htm

⁶⁷国家科学技术委员会

⁶⁸基因工程安全管理办法

⁶⁹中国生物技术发展中心

⁷⁰<http://www.most.gov.cn/zzjg/zzjgzs/zzjgsyswzx/index.htm>

⁷¹中国人类遗传资源管理办公室

⁷²http://www.most.gov.cn/bszn/new/rlyc/wjxz/200512/t20051226_55327.htm

⁷³ http://news.xinhuanet.com/politics/2015-03/14/c_127581114.htm;

<http://www.miit.gov.cn/n11293472/n11459606/n11459642/11459720.html>

science community, formulating major policies regarding R&D integrity, and supervising and coordinating the implementation of relevant policies and key initiatives. The membership of the inter-agency mechanism now consists of 11 different institutions.^{74 75}

- An office promoting R&D integrity, namely the Office of Research Integrity⁷⁶ is located in the Ministry of Science and Technology. Dr. SUN Ping⁷⁷ is the current secretariat. Its role includes conducting relevant research, the administration of the MOST-ORI-sponsored projects, and the maintenance of a dedicated research integrity website in China⁷⁸.
- The Ministry of Science and Technology has an expert advisory committee on R&D integrity development⁷⁹ that conducts research on the progress of national and regional R&D integrity development and gives advice on promoting policies regarding R&D integrity improvement.⁸⁰
- The National Natural Science Foundation of China⁸¹ (NSFC) has a subordinating Supervision Committee⁸² that handles issues concerning the R&D integrity of Chinese scientists.⁸³
- The inter-ministry mechanism on the bio-safety administration of agricultural GMOs is located in the Ministry of Agriculture. It was set up in accordance with the *Regulations for the Bio-safety Administration of Agricultural GMOs* and aims to improve the bio-safety management of agricultural GMOs, and strengthen the collaboration between relevant departments.⁸⁴
 - A national committee concerning agricultural bio-safety of GMOs⁸⁵ is in this mechanism. It is responsible for evaluating the bio-safety of agricultural GMOs and giving advice on the administration in this subject.
 - Another national committee in this mechanism works on the standardisation administration in agricultural bio-safety of GMOs.⁸⁶

⁷⁴The membership of the inter-agency mechanism building R&D integrity now consists of 11 different institutions, including: the Ministry of Science and Technology; the Ministry of Education; the Ministry of Finance; the Ministry of Human Resources and Social Security; the Ministry of Health; the General Administration of Press and Publication; the PLA General Armament Department; the Chinese Academy of Sciences; the Chinese Academy of Engineering; the National Natural Science Foundation of China, and the China Association for Science and Technology.

⁷⁵http://www.most.gov.cn/kycxjs/kycxgzjz/200703/t20070321_42253.htm

⁷⁶科研诚信建设办公室

⁷⁷孙平

⁷⁸中国科研诚信网, <http://www.sinori.cn>

⁷⁹科研诚信建设工作专家咨询委员会

⁸⁰http://www.most.gov.cn/kycxjs/kycxgzdt/200706/t20070629_50754.htm

⁸¹国家自然科学基金委

⁸²监督委员会

⁸³<http://www.nsf.gov.cn/Portals/1/fj/pdf/04-01.pdf>

⁸⁴Current members include: the Ministry of Agriculture; the National Development and Reform Commission; the Ministry of Education; the Ministry of Science and Technology; the Ministry of Commerce; the Ministry of Health; the State Administration for Industry and Commerce; the General Administration of Quality Supervision, Inspection and Quarantine; the State Environmental Protection Administration, and the State Forestry Administration.

⁸⁵国家农业转基因生物安全委员会

⁸⁶全国农业转基因生物安全管理标准化技术委员会,

http://www.moa.gov.cn/ztl/zjyqwgz/zswd/201304/t20130427_3445782.htm

2.3 National laws and policies for ethics assessment

In the Chinese Constitution, the content related to ethics assessment is all very abstract and formulated in terms of general values. In Chinese culture, peace, safety and harmony are very important values inherited from ancient times. These values are all directly related to ethics and embodied in the constitution implicitly. Explicit expressions of ethics assessment are seen in some national laws and regulations.

In regulations and policies, there are basically two focuses related to ethics assessment. One relates to the ethics issues in life science, especially issues concerning humans. The other relates to the environment and environmental protection.

Life science

- The NHFPC (and its predecessor the Ministry of Health) has participated in drafting several regulations in the field of life science that manage relevant ethical issues. These ordinances manage issues on various branches of life science, including organ transplantation, drug testing, reproductive technology, hospital administration, and so forth. Some examples are:
 - The Regulations on Human Organ Transplant⁸⁷
 - The Norms on the Quality Administration of Clinical Drug Test⁸⁸
 - The Ethics Principles on Assisted Reproductive Technology and Human Sperm Bank⁸⁹
 - The Methods for the Administration of Reproductive Technology⁹⁰
 - The Methods for the Ethics Censorship of Human-related Bio-medical Research (Trail)⁹¹
 - The Guidelines for Hospital Administration Evaluation (2008 edition)⁹²

Environment

- The Chinese Constitution explicitly states that the State protects and improves the environment in which people live, and the ecological environment. It prevents and controls pollution and other public hazards (Article 26). In 1979, China issued the Environmental Protection Law (For Trial Implementation) and this law was revised and officially issued in 1989. Currently, the major law governing environmental protection is the Environmental Protection Law of the People's Republic of China (2014 Revision).⁹³ In relation to environmental impact assessment, China has the Law of the People's Republic of China on Appraising of Environment Impacts (also known as the Law of the People's Republic of China on Environmental Impact Assessment)⁹⁴.
- Moreover, the Chinese government has issued laws and regulations on specific facets of environmental protection. Some examples include:
 - Marine Environment Protection Law of the People's Republic of China⁹⁵

⁸⁷人体器官移植条例，2007

⁸⁸药物临床试验质量管理规范，2003

⁸⁹人类辅助生殖技术和人类精子库伦理原则，2001

⁹⁰人类辅助生殖技术管理办法，2001

⁹¹涉及人的生物医学研究伦理审查办法（试行），2007

⁹²医院管理评价指南，2008年版

⁹³中华人民共和国环境保护法，2014修订

⁹⁴中华人民共和国环境影响评价法，2002

⁹⁵中华人民共和国海洋保护法，1982

- Grassland Law of the People’s Republic of China⁹⁶
- Rules for Implementation of the Law of the People’s Republic of China on the Prevention and Control of Atmospheric Pollution⁹⁷
- Law of the People’s Republic of China on Water and Soil Conservation⁹⁸
- Regulations for the Administration of Environmental Protection of Construction Projects⁹⁹
- Forest Law of the People’s Republic of China¹⁰⁰
- Law of the People’s Republic of China on the Prevention and Control of Atmospheric Pollution¹⁰¹
- Law of the People’s Republic of China on the Prevention and Control of Water Pollution¹⁰²

Other issues

Another relevant field in ethics assessment in China is the treatment of plant and animal life. The Constitution addresses that the State ensures the rational use of natural resources and protects rare animals and plants (Article 9). Thus, China has two corresponding national laws and regulations: Law of the People’s Republic of China on the Protection of Wildlife,¹⁰³ and Regulations of the People’s Republic of China on Wild Plants Protection.¹⁰⁴

In addition, China is working on a national law on animal protection, which covers issues not only within rare animal or wildlife protection but also issues concerning animals in general such as animal abuse and animal welfare. In 2009, the Animal Protection Law of the People’s Republic of China (Draft)¹⁰⁵ as an experts’ proposal was published. However, the official law has yet to be enacted.

China also has a regulation dealing with animal experimentation, i.e., the *Regulations for the Administration of Affairs Concerning Experimental Animals*.¹⁰⁶ However this regulation only demands that experimenters should treat the animals for experiments seriously, not make fun of or torture them. This regulation does not give explicit instructions on rights, protection or the welfare of animals used in experiments.

3 Public research and innovation systems

This chapter provides a discussion of ethics assessment of R&I in public research and innovation systems. The sections below discuss the general structure and the role of government, the role of industry national research associations and standard-setting bodies, the role of research funding organisations, and the role of research performing institutions.

⁹⁶中华人民共和国草原法，1985

⁹⁷中华人民共和国大气污染防治法实施细则，1991

⁹⁸中华人民共和国水土保持法，1991

⁹⁹建设项目环境保护管理条例，1998

¹⁰⁰中华人民共和国森林法，1998

¹⁰¹中华人民共和国大气污染防治法，2000

¹⁰²中华人民共和国水污染防治法，2008

¹⁰³中华人民共和国野生动物保护法，2004 修订

¹⁰⁴中华人民共和国野生植物保护条例，1996

¹⁰⁵动物保护法（专家建议稿）

¹⁰⁶实验动物管理条例，1988

3.1 General structure and the role of government

This section provides an overview of the general structure of the affiliated public institutions of the Chinese State Council, which play important roles in building and administrating the national R&I ethics system. This part also covers the higher education system and the government's role within this structure.

System of public research and innovation organisations

In China, research and innovation organisations are basically either independent or belong to universities. Independent research organisations are public institutions affiliated with the government.

Chinese national public institutions which play roles in research and innovation are always affiliated with the central government. They are set up and funded by the government but are not a part of it. Most of these institutions are directly under the State Council or an individual ministry. These affiliated organisations are not executive organs of the government, but some of them are endowed with some executive power.

“Public institutions”¹⁰⁷ here refers to the public service organisations that are established by the state organs or other organisations by using the state-owned assets for the purpose of engaging in activities of education, science and technology, culture and hygiene (Article 2, *Interim Regulation on the Registration of Public Institutions*¹⁰⁸, 2004). These institutions include educational institutions, research institutions, research funding organisations, and so forth.

System of higher education and research institutions

Most Chinese universities are either Central Affiliated Universities¹⁰⁹ which are funded and administered by ministries of the central government, or Local Provincial Universities¹¹⁰ that are funded and administrated by provincial administrative regions. The latter constitute a large part of the Chinese higher education system, while more important and influential universities in China are always in the first category. The major strength of research and innovation of Chinese universities is also centralised in the Central Affiliated Universities. Private universities are not well developed in China.

Most Central Affiliated Universities are directly under the Ministry of Education. By 2012, there are 75 universities affiliated with this ministry. In addition to this, seven important technology universities, majoring in research related to the national defence industry, are affiliated with the Ministry of Industry and Information Technology. Two universities are affiliated with the Ministry of Transport. Two universities are affiliated with the Chinese Academy of Sciences, which is a public research institution affiliated with the State Council.

In order to promote the research abilities of the country, the Chinese government also commissioned several projects allocating large amounts of funding to some universities. Two

¹⁰⁷Namely, in Chinese 事业单位.

¹⁰⁸事业单位登记管理暂行条例，2004

¹⁰⁹中央部属高校

¹¹⁰地方省属高校

main projects are Project 985 which aims to found world-class universities in China, and Project 211 which intends to raise the research standards of high-level universities. Moreover, there are also university associations or alliances such as the C9 League which aims at building world-class excellence in university education and research, E9 League (Excellence 9) which focuses on collaborations among technological universities, and so forth.

Role of government in the Chinese research and higher education system

As public institutions are mostly directly affiliated with the government and almost all Chinese higher education institutions are under the central or local government, the Chinese government plays a very important role in the public research and innovation. The independence and freedom of important research institutions is restricted because they are all directly under the leadership of the central government, with most of them directly under the Ministry of Education.

3.2 National research associations and standard-setting bodies

This section provides an overview of the research associations and science academies that represent public R&I institutions and coordinate their activities, accreditation, certification, and the standard-setting organisations for publicly funded research in China, and analyses their role in ethics assessment. Affiliated institutions are directly covered under their higher organisation.

State Council Affiliated Institutions

- The Chinese Academy of Sciences (CAS)¹¹¹ is a comprehensive natural science and high-tech research and development centre. It is the linchpin of China's drive to explore and harness high technology and the natural sciences. It has a wide-ranging research and development network and a system of higher education.¹¹²
 - The Science Ethics Committee¹¹³ of the CAS was established in 1996. It is responsible for supervising and administering the academic ethics of researchers and scientists, by which it helps to promote research ethics in China's science community.¹¹⁴ In previous years it has hosted or sponsored some research programs on the moral and ethical principles related to research. From 2011, it has organised a seminar on science and technology ethics¹¹⁵ every year to deal with relevant ethical issues and develop relevant regulations for the R&D of new technologies. The two topics of the 2011 seminar were the ethics of transgenic technology and the ethics of nanotechnology. Based on the discussion in the seminar, the committee drafted the *Guiding Principles Concerning the Research and Development of Transgenic and Nano Technologies*.¹¹⁶ In 2012, the topic was ethical issues and social responsibilities of scientists in the research and application of stem cells. The subject of the 2013 seminar was the ethical issues in the development of Internet technology, while in 2014 the topic was ecological environmental ethics and sustainable development.

¹¹¹中国科学院

¹¹²http://english.cas.cn/about_us/introduction/201501/t20150114_135284.shtml

¹¹³学部科学道德建设委员会

¹¹⁴<http://www.casad.cas.cn/channel.action?chnlid=221>

¹¹⁵科技伦理研讨会

¹¹⁶转基因和纳米技术研发行为准则, <http://www.casad.cas.cn/document.action?docid=7267>

- The Shanghai Institutes for Biological Sciences (SIBS)¹¹⁷ is a research institute of CAS. It is a leading biological research institute in China.¹¹⁸ In 2005, an ethics committee was created within SIBS. It performs reviews and offers advice on ethical issues arising from research involving human and animal subjects conducted by SIBS staff. It is also responsible for providing guidelines for the development of proper procedures to deal with relevant issues.¹¹⁹
- The Institute of Psychology of CAS¹²⁰ is a CAS institute working on the understanding of human mind by exploring both the biological and environmental factors underlying the mind and behaviour.¹²¹ This institute has an Institutional Review Board¹²² (IRB), rearranged in 2008, that aims to protect the safety and welfare of humans and animals who are involved in research and experiments. Since 2008, all research programs must be first approved by the IRB before being carried out.¹²³
- In addition, many CAS institutions carry out relevant research about ethics assessment. Examples include the Institute of Geographic Sciences and Natural Resources Research¹²⁴, the Institute of Policy and Management¹²⁵, the Institute of Zoology.¹²⁶
- The Chinese Academy of Engineering (CAE)¹²⁷ is a national and independent organisation directly under the State Council. It composes elected members with the highest honour in the community of engineering and technological sciences of China. Its mission includes initiating and conducting strategic studies, providing consultancy services for the nation's key issues in engineering and technological sciences and promoting the progress of the enterprise of engineering and technological sciences in China.¹²⁸
 - The Science Ethics Committee¹²⁹ of the CAE is founded in 1997. It guides the committees of CAE departments in dealing with science and academic issues related to ethics, investigating cases of ethical problems and providing opinions, and other related roles. It has issued two regulations governing the research ethics of academicians and scholars in 1998 and 2012.¹³⁰
- The Chinese Academy of Social Sciences (CASS)¹³¹ is the premier academic organisation and comprehensive research centre of China in the fields of philosophy and social sciences. In 2014, it launched the Chinese Evaluation Center for Humanities and Social Sciences,¹³² which is committed to building an authoritative evaluation system for social sciences, including ethics evaluation. In addition, there is also research

¹¹⁷上海生命科学研究院

¹¹⁸<http://english.sibs.cas.cn/au/bi/>

¹¹⁹http://english.cas.cn/resources/archive/china_archive/cn2005/200909/t20090923_41323.shtml

¹²⁰心理研究所

¹²¹<http://english.psych.cas.cn/au/>

¹²²伦理委员会

¹²³http://www.cas.cn/xw/yxdt/200906/t20090608_686452.shtml

¹²⁴地理科学与资源研究所

¹²⁵科技政策与管理科学研究所

¹²⁶动物研究所

¹²⁷中国工程院

¹²⁸<http://en.cae.cn/en/About%20CAE/Missions/>

¹²⁹科学道德建设委员会

¹³⁰中国工程院院科学道德行为准则；中国工程院院科学道德守则，

http://www.cae.cn/cae/html/main/col15/2012-02/24/20120224094527266159538_1.html

¹³¹中国社会科学院

¹³²中国社会科学评价中心

concerning the ethics of social science studies such as sociology and social work in the relevant institutions of CASS.¹³³ The CASS also has a Research Center for Corporate Social Responsibility¹³⁴ that studies issues related to CSR and CSR performance in China.¹³⁵

Other Government affiliated institutions

- The Development Center for Medical Science and Technology (DCMST)¹³⁶ is under the direct leadership of the NHFPC. In addition to its responsibility for developing relevant policies, it establishes specific research projects and conducts clinical research. It performs ethics assessment by both launching and maintaining a system for the assessment of technologies and providing ethics guides in issuing policies. In the *Rules for the Clinical Research Programs in Medical Institutions*¹³⁷ issued in 2014, the DCMST required all the medical institutions which perform clinical research to assemble a clinical research management committee¹³⁸ and an ethics committee¹³⁹ to evaluate the ethical conditions in clinical research programs.¹⁴⁰
- The Chinese Academy of Medical Sciences¹⁴¹ is a national research institution and comprehensive research centre affiliated with DCMST. It is also known as the Peking Union Medical College Hospital,¹⁴² which is a comprehensive hospital delivering clinical care, scientific research and innovation, and medical education. It has an independent pharmaceutical clinical tests ethics committee¹⁴³ for assessing medical ethics issues.¹⁴⁴ There are also medical ethics committees in the specific research institutions of the Chinese Academy of Medical Sciences.¹⁴⁵
- The China Academy of Chinese Medical Sciences (CACMS)¹⁴⁶ is an institution directly under the leadership of the State Administration of Traditional Chinese Medicine¹⁴⁷, which itself is an administration under the ministries and commissions of the State Council. CACMS is a national comprehensive institution for scientific research, clinical medicine and medical education on traditional Chinese medicine.¹⁴⁸ In 2010, two committees related to ethics assessment were created in CACMS. One is the committee on research ethics¹⁴⁹ which works on the R&D integrity in traditional

¹³³<http://casseng.cssn.cn/>

¹³⁴ 中国社会科学院经济学部企业社会责任研究中心

¹³⁵ <http://www.cass-csr.org/#>

¹³⁶ 医药卫生科技发展研究中心

¹³⁷ 医疗卫生机构开展临床研究项目管理办法

¹³⁸ 临床研究管理委员会

¹³⁹ 伦理委员会

¹⁴⁰ <http://www.dcmst.org.cn/2014-11-13-02-07-52>

¹⁴¹ 中国医学科学院

¹⁴² 北京协和医院

¹⁴³ 药物临床试验伦理委员会

¹⁴⁴ http://www.pumch.cn/Category_315/Index.aspx

¹⁴⁵ <http://www.pumc.edu.cn/>

¹⁴⁶ 中国中医科学院

¹⁴⁷ 国家中医药管理局

¹⁴⁸ <http://www.cacms.ac.cn/publicfiles/business/htmlfiles/zgzyeng/acams/list.html>

¹⁴⁹ 科学道德委员会

Chinese medicine research, and the other is the committee on medical ethics¹⁵⁰ that studies and resolves ethical issues in the field of traditional Chinese medicine.¹⁵¹

3.3 Research funding organisations

This section discusses how research funding organisations include ethics assessment in determining how to spend their funding.

- The National Natural Science Foundation of China (NSFC) is directly under the jurisdiction of the State Council. It administrates the National Natural Science Fund and coordinates the fund to support basic research and promote free exploration.¹⁵² The subordinating Supervisory committee is composed of scientists and administrative experts and conducts its supervision function independently. It guarantees the implementation of the principles for evaluation, safeguards the fairness and scientific value of the funding system and the interests and rights of scientists, and promotes scientific integrity and ethics in research.¹⁵³
- The Chinese Academy of Sciences (CAS) has established various funds to encourage scientific research and innovation. Funded candidates, according to the corresponding regulations, should adhere to scientific research ethics and R&D integrity. All funds have their own decision-making committee¹⁵⁴ which selects fund winners among candidates. Such funds include: the 100 Talents Project,¹⁵⁵ the Foundation for Selected Young Scientists Studying Abroad,¹⁵⁶ the Foundation for Study Encouragement to Young Scientists,¹⁵⁷ the Presidential Foundation¹⁵⁸ and so forth.
- The Ministry of Science and Technology (MOST) collaborates with other organisations in the scheme demonstration, assessment, acceptance and policy making of major S&T special projects. Related funding projects include the State Key Program for Basic Research of China,¹⁵⁹ the Special Foundation for State Major Basic Research Program of China¹⁶⁰, and the National Key Basic Research Special Foundation of China.¹⁶¹ The implementation and approval of these projects are performed within the Department of Basic Research¹⁶² in the MOST. The Department of Facilities and Financial Support¹⁶³ within the MOST is responsible for the financial balance and budget of funds. Other funding projects within the MOST include the National “Climbing” Program of

¹⁵⁰医学伦理委员会

¹⁵¹<http://www.cacms.ac.cn/publicfiles/business/htmlfiles/zgzy/dtxw/201009/9580.html>;

<http://www.dcmst.org.cn/2014-12-24-11-11-31/159-2014-12-25-01-28-25>

¹⁵²<http://www.nsf.gov.cn/publish/portal1/>

¹⁵³<http://www.nsf.gov.cn/Portals/1/fj/pdf/04-01.pdf>

¹⁵⁴评审委员会

¹⁵⁵百人计划基金

¹⁵⁶留学经费择优支持基金

¹⁵⁷青年科学工作者研究奖励基金

¹⁵⁸院长基金

¹⁵⁹国家重点基础研究项目

¹⁶⁰国家重点基础研究项目专项基金

¹⁶¹国家重点基础研究项目特别基金

¹⁶²基础研究司

¹⁶³资源配置与管理司

China,¹⁶⁴ the National High Technology Research and Development Program of China,¹⁶⁵ and the National High Technology Joint Research Program of China.¹⁶⁶

- The Ministry of Education administers several funds as a part of a higher education development program in China. Funding applicants should satisfy relevant standards including those on R&D integrity. These funds include the Cheung Kong Scholars Programme of China (also known as the Changjiang Scholars Program),¹⁶⁷ the Research Award Fund for Outstanding Young Teachers in Higher education Institutions,¹⁶⁸ the Foundation for Key Program of Ministry of Education of China,¹⁶⁹ and the Foundation of the Ministry of Education of China for Returned Scholars.¹⁷⁰
- The China Scholarship Council (CSC)¹⁷¹ is a non-profit institution affiliated with the Ministry of Education. The CSC provides financial assistance to Chinese citizens who wish to study abroad and also to foreign citizens who wish to study in China. Its goal is to develop educational, scientific and technological, and cultural exchanges and economic and trade cooperation between China and other countries. The major funding of the CSC comes from the states special appropriations for scholarship programmes. The division working on examination and consultation is a committee established by the CSC, and a secretariat is in control of the daily work including formulating relevant management regulations and methods, assessing and approving the application for financial assistance.¹⁷²
- The Chinese central government funds scientists through the National Science and Technology Awards.¹⁷³ The most prominent is the Highest Science and Technology Awards.¹⁷⁴ The Ministry of Science and Technology is responsible for appraising the National S&T Awards.
- The Tan KahKee Science Award Foundation (TSAF)¹⁷⁵ is supported by the Ministry of Finance and funded by Chinese Academy of Sciences and the Bank of China. Its mission is to reward outstanding Chinese scientists who are responsible for important original and innovative achievements in science and technology. The Council Board is responsible for the Foundation. The Foundation encourages independent innovation and nurtures a strict and vigorous work ethic among Chinese scientists.¹⁷⁶

3.4 Research performing institutions

This section discusses how Chinese research performing institutions undertake ethics assessment. Major research performing institutions in China consist of universities, national research associations and hospitals specialising in medical research. These institutions are often

¹⁶⁴国家攀登计划

¹⁶⁵国家高技术研究发展计划

¹⁶⁶国家高技术项目联合

¹⁶⁷长江学者奖励计划, <http://www.1000plan.org/qrjh/article/18427> The Cheung Kong Scholars Programme is funded by both the Ministry of Education of PRC and Li Ka Shing Foundation (李嘉诚基金会) which is a charitable organisation founded by Hong Kong entrepreneur Li Ka-shing (李嘉诚).

¹⁶⁸高等学校优秀青年教师教学、科研奖励基金

¹⁶⁹教育部科学技术重大研究项目基金

¹⁷⁰国家教育部归国学者基金

¹⁷¹国家留学基金管理委员会

¹⁷²<http://en.csc.edu.cn/About/c309df7fb3fa40b3a179a7ad93f11988.shtml>

¹⁷³国家科学技术奖励

¹⁷⁴国家最高科学技术奖

¹⁷⁵陈嘉庚科学奖基金会

¹⁷⁶<http://www.tsaf.ac.cn/english/foundation/1275555631152.html>

also educational institution at the same time. The major national research associations, namely CAS, CAE and CASS, were discussed in section 3.2. This section focuses on universities and hospitals.

First, the teaching of ethics assessment is conducted by universities in education. In medical universities (colleges or departments), although the curriculum is still based on a biomedical mode, ethics is receiving greater attention.¹⁷⁷ The study of medical ethics started later compared with western countries (the first course on medical ethics began in only 1981) and so at first Medical Ethics¹⁷⁸ was an elective course in most medical universities and colleges. Nowadays, Medical Ethics is a required course in all medical universities. This requirement is issued in the *Chinese Undergraduate Medical Education Standards (2009)*¹⁷⁹ produced by MOE and then MOH. However there are still problems, including that the average of academic hours of Medical Ethics in China is less than one fifth of the academic hours of corresponding courses in America and Japan and that the course content is too abstract and divorced from reality.¹⁸⁰ In technological or engineering universities (colleges, or departments), ethics is not given much importance in teaching. *Dialects of Nature*¹⁸¹ used to be a required course for all engineering or technological students, but in the curriculum reform in 2010 this course became an elective course and the required number of academic hours was reduced.¹⁸² Engineering Ethics, Technological Ethics and Scientific Ethics are not yet courses in the Chinese curriculum for technological or engineering students. There have recently been appeals for the teaching of scientific and technological ethics among technological and engineering students from different agents, including politicians (from democratic parties), scholars from colleges and universities, and famous scientists (such as, CHEN Zhu).¹⁸³

In research universities, the ethics assessment is better performed than in medical universities. The GCP (Good Clinical Practice)¹⁸⁴ regulations issued in 1998 stressed the importance of ethics assessment and approval from ethics committees. After the publication of this regulation, hospitals and medical universities gradually formed committees and assessed clinical experiments (especially those related to medicines).¹⁸⁵ Some universities have ethics committees assessing more general medical ethics issues. For instance, the ethics committee of Peking University Health Center also covers the ethics in animal experiments and any biomedical research involving human subjects.¹⁸⁶

In hospitals, ethics committees are widely found due to the requirements of four regulations issued by the then MOH. These regulations are: the *GCP (1998)*; the *Ethical Principles for Biomedical Research Involving Human Subjects (1998, 2007 revised)*, which requires institutions which perform any research or technological application involving human subjects to establish ethics committees assessing and supervising related research or application in terms

¹⁷⁷<http://www.lunwenstudy.com/tdxlshuoshi/jiaoyuxueshuoshi/65693.html>

¹⁷⁸ 医学伦理学（课程）

¹⁷⁹ 本科医学教育标准——临床医学专业（试行），2009

¹⁸⁰ 中西方医学伦理学教育比较研究及其启示。陈明华，郝云玲，等。中国高等医学教育，2009年第8期。Retrieved from: <http://211.70.128.25/2012/zlczs/yxllx/test4.pdf>

¹⁸¹ 自然辩证法（课程）

¹⁸² <http://www.chinasdn.org.cn/n1249550/n1249734/12340321.html>

¹⁸³ <http://gov.eastday.com/node933/node934/czyz/sqmy/u1a1739900.html> ;

http://sscp.cssn.cn/xkpd/jyx_20174/201504/t20150429_1644904.html ; <http://www.gmw.cn/01gmr/2002-12/05/09-6C0129A7F48E06C748256C85007EDA02.htm>

¹⁸⁴ 药物临床试验质量管理规范，1998，2003 修订

¹⁸⁵ <http://baike.baidu.com/view/4676039.htm>

¹⁸⁶ <http://research.bjmu.edu.cn/zl/llwyk/index.htm>

of ethics; the *Guidelines for Hospital Management Evaluation* (2008), which directs hospitals to improve their management and medical quality, with the ethics committee being one of the organisations managing the medical quality; and the *Rules for the Clinical Research Programs in Medical Institutions* (2014), which requests all clinical research institutions to establish ethics committees to ensure that all the clinical research complies with ethics norms. According to all these regulations, ethics committees in hospitals should play a role both in ethics assessment and ethics guidance. The work of ethics committees in hospitals still faces difficulties, however. According to a research by the Shanghai Clinical Research Center,¹⁸⁷ by 2008, only half of the 3A level¹⁸⁸ (the highest level in the classification of Chinese hospitals) had established the ethics committees, and within this half, only about 20% ethics committees are described as reasonably constituted and working independently. Many other problems in ethics assessment, e.g. lack of attention to ethics and lack of funds, also exist.¹⁸⁹ Chinese higher-level hospitals also have educational functions. The *Ethical Principles for Biomedical Research Involving Human Subjects* (1998, 2007 revised) explicitly requests relevant institutions (including hospitals) to conduct training regarding ethics.

4 Private research and innovation systems

This chapter provides a discussion of ethics assessment of R&I and *corporate social responsibility* (CSR) in private research and innovation systems. First, it examines the general structure and the role of government. Then, it reviews the role of industry associations and accreditation, certification and standard-setting organisations. Finally, it discusses the role of industry itself.

4.1 General structure and the role of government

This section discusses the following topics: the Chinese industry landscape; major Chinese organisations that represent industry; and Chinese government policies and initiatives supporting ethics assessment and CSR in private industry.

Chinese industry landscape

Chinese industry is of great economic and social value to China. According to the IMF and the CIA World Factbook, China's industrial output in 2015 was worth USD 4,922 billion, which ranks the first in the world. In 2014, industry contributed to 42.6% of the nominal GDP, which amounts to 4,413,825 million dollars.¹⁹⁰ According to the third Chinese national economic census, by the end of 2013 China had an employed population of about 140.26 million in industry (excluding construction), which comprises around 39.5% of all the global employed population. China has a relatively complete industry system. China's machinery manufacturing industry can provide complete sets of large advanced equipment. Manufacturing is the largest industrial sector in China. In manufacturing, the biggest sectors are computer, communications and other electronic equipment manufacturing, non-metallic

¹⁸⁷ 上海医药临床研究中心

¹⁸⁸ 三级甲等医院

¹⁸⁹ http://www.scrnet.org/ethical_issues/download/2-05.pdf

¹⁹⁰ http://en.wikipedia.org/wiki/List_of_countries_by_GDP_sector_composition

mineral products industries, and electrical machinery and equipment manufacturing. Other major industries include mining and the energy production and supply industry.¹⁹¹

Organisations that represent industry

The biggest national industry association is the China Enterprise Confederation/China Enterprise Directors Association (CEC/CEDA). It is the first national economic social association in China. It is an associated group of enterprises and entrepreneurs that consists of members from different fields including enterprise, economic, researching, media and other related subjects.¹⁹² Many different industries have their own representative organisations. In manufacturing, the largest industrial sector in China, the Asian Manufacturing Association¹⁹³ is the representative organisation.¹⁹⁴ In other industries, representative organisations include the China Construction Machinery Association,¹⁹⁵ the China Food and Packaging Machinery Industry Association,¹⁹⁶ the China Association of Automobile Manufactures¹⁹⁷, China National Food Industry Association,¹⁹⁸ the China Pharmaceutical Industry Association,¹⁹⁹ the China Electrical Equipment Industry Association²⁰⁰, and the China Nonferrous Metals Industry Association.²⁰¹

Government policies and initiatives to support ethics assessment in private industry

Primarily, the Chinese government implements ethics assessment in private industry in the field of environmental protection. The Ministry of Environmental Protection (MEP) is the major institution drafting and conducting assessment in this field. Within the MEP, the Department of Environmental Monitoring²⁰² drafts laws and policies and conducts activities about environmental monitoring, and the Department of Environmental Impact Assessment²⁰³ drafts regulations and policies and organises relevant activities on environmental impact assessment (EIA). Along with the governmental institutes, there are numerous laws or regulations which apply to private industry. These laws are specifically described in section 2.3. Among the laws and regulations, the EIA-related law is the Law of the People's Republic of China on Appraising of Environmental Impacts (also translated as the Law of the People's Republic of China on Environmental Impact Assessment)²⁰⁴, which was issued in 2002 and has been in effect since 2003.

In addition, the issue of corporate social responsibility (CSR) has also gradually become a significant point in the governmental ethics assessment and guidance. In 2005, a national

¹⁹¹ <http://www.stats.gov.cn/ztc/zdtjgz/zgijpc/dscjpc/cgfb/>;
http://www.stats.gov.cn/tjsj/zxfb/201412/t20141216_653709.html;
http://www.stats.gov.cn/tjsj/zxfb/201412/t20141216_653695.html

¹⁹² <http://www.cec-ceda.org.cn/>

¹⁹³ 亚洲制造业协会

¹⁹⁴ <http://www.ama2007.com/us.html>

¹⁹⁵ 中国工程机械工业协会 <http://www.cncma.org/>

¹⁹⁶ 中国食品和包装机械工业协会 <http://www.chinafpma.org/>

¹⁹⁷ 中国汽车工业协会 <http://www.caam.org.cn/>

¹⁹⁸ 中国食品工业协会 <http://www.cnfia.cn/html/main/index.html>

¹⁹⁹ 中国化学制药工业协会 <http://www.cpia.org.cn/>

²⁰⁰ 中国电器工业协会 <http://www.ceeia.com/>

²⁰¹ 中国有色金属工业协会 <http://www.chinania.org.cn/>

²⁰² 环境监测司

²⁰³ 环境影响评价司

²⁰⁴ 中华人民共和国环境影响评价法

conference about CSR was held in Nanchang, called the “Nanchang Summit on Constructing Harmonious Society and Corporate Social Responsibility”.²⁰⁵ This conference was hosted by the local government and the Chinese Association of Productivity Science (CAPS)²⁰⁶ which is administered by the National Bureau of Statistics.²⁰⁷ This conference became the start of the governmental initiative in supporting CSR. To further promote CSR in China, the government in 2006 issued the *Guidelines for Publishing Corporate Responsibility Reporting in China*²⁰⁸ and the *Methods for Chinese Corporate Responsibility Evaluation*.²⁰⁹ These two regulations were drafted and issued specifically by the Research Centre of Transnational Corporations of the Ministry of Commerce²¹⁰ and Institute of World Economics and Politics, CASS (CASS-IWEP).²¹¹ The *Guideline* suggests that corporate responsibility reporting is an important means to develop the enterprise and that corporations should publish sustainability reports. It also outlines the format of a corporate responsibility report and offers detailed sections and topics.²¹² The *Methods* addresses the scopes of corporate responsibility and clearly identifies corporate social responsibility and corporate environmental responsibility as important issues, while also giving details in the methods of evaluating corporate responsibilities.²¹³ These two publications show that sustainability reporting is on the agenda of government CSR initiatives. Moreover, an institution studying CSR and CSR localisation related issues, namely the Research Center for Corporate Social Responsibility in CASS (CASS-CSR) was established in 2008, which demonstrates the Chinese government’s dedication in developing CSR related assessment and other activities.

4.2 Industry associations and accreditation, certification and standard-setting organisations

This section discusses the role of industry associations and the role of accreditation, certification, evaluation and standard-setting organisations for industry in the setting and enforcement or promotion of standards and practices with regard to ethics assessment and CSR in Chinese industry.

Industry associations

The biggest national industry association is the China Enterprise Confederation/China Enterprise Directors Association (CEC/CEDA).²¹⁴ It is the first national economic social association in China. As an associated group of enterprises and entrepreneurs, it consists of members from different fields including enterprise, economic, researching, media and other related subjects. CEC/CEDA also pays some attention to ethics assessment and CSR. Among its subordinate 15 operating departments and 11 sub-committees, it has a professional sub-committee called the China Business Council for Sustainable Development (CBCSD)²¹⁵ which is related to ethics assessment and guidance, especially in terms of sustainable development.

²⁰⁵ 建设和谐社会与企业社会责任国际论坛

²⁰⁶ 中国生产力学会

²⁰⁷ 国家统计局

²⁰⁸ 中国公司责任报告编制大纲

²⁰⁹ 中国公司责任评价办法

²¹⁰ 商务部跨国中心研究公司

²¹¹ 中国社会科学院世界经济与政治研究所

²¹² <http://mnc.people.com.cn/GB/54849/58010/58234/4095943.html>

²¹³ http://www.gov.cn/jrzq/2006-02/17/content_202178.htm

²¹⁴ 中国企业联合会、中国企业家协会

²¹⁵ 可持续发展工商委员会

This committee was founded in 2003 as a result of the collaboration between CEC/CEDA and WBCSD (World Business Council for Sustainable Development). The main task of CBCSD is to serve as a platform for Chinese enterprises to communicate and collaborate with foreign enterprises; to help enterprises to face the challenges related to environmental protection, health, safety, cooperate social responsibility, climate change, globalisation, and so on; and to provide the government with advice for policy making.²¹⁶

Certification, evaluation and standard-setting organisations

Certification, evaluation and standard-setting organisations for industry that support private sector organisations in conducting business in an ethical fashion focus strongly on CSR. These organisations with normative power are always governmental institutions in China. Some of the major organisations are described here:

- Certification and Accreditation Administration of the People's Republic of China (CNCA)²¹⁷ is founded and authorised by the State Council to manage, supervise and comprehensively coordinate national certification and accreditation work. It also participates in drafting laws and regulations in relevant fields such as national certification and accreditation, safety and quality licensing.²¹⁸
- General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China (AQSIQ)²¹⁹ is a ministerial administrative organ directly under the State Council. It is responsible for national quality standards, metrology, import-export food safety, certification and accreditation, standardisation, as well as administrative law-enforcement.²²⁰
- Standardization Administration of the People's Republic of China (SAC)²²¹ is authorised by the State Council to exercise administrative responsibilities by undertaking unified management, supervision and overall coordination of standardisation work in China.²²²
- China National Institution of Standardization (CNIS)²²³ is directly subordinate to AQSIQ. It is a national social service institution dedicated to standardisation research. The main work of CNIS covers global, strategic and comprehensive standardisation issues in the national economy and the social development of China.²²⁴
- China Electronics Standardization Institute (CESI)²²⁵ is a professional institute for standardisation in the field of electronics and IT industry under the MITT. CESI develops scientific research for standards, testing, measurement, certification and information service, and provides expert support for the government's strategic study, industry management and strategic decision.²²⁶
- China Communications Standards Association (CCSA)²²⁷ is a non-profit organisation established by various enterprises and institutes. It conducts standardisation activities

²¹⁶ <http://www.cec-ceda.org.cn/english/>

²¹⁷ 中国国家认证认可监督管理委员会（中华人民共和国国家认证认可监督管理局）

²¹⁸ <http://www.cnca.gov.cn/>

²¹⁹ 国家质量监督检验检疫总局

²²⁰ <http://english.aqsiq.gov.cn/>

²²¹ 中国国家标准化管理委员会

²²² <http://www.sac.gov.cn/sacen/>

²²³ 中国标准化研究院

²²⁴ <http://en.cnis.gov.cn/>

²²⁵ 中国电子技术标准化研究院

²²⁶ <http://www.cesi.ac.cn/index.html> ; <http://www.cesi.ac.cn/cesi/englishversion/2010/0316/8355.html>

²²⁷ 中国通信标准化协会

in the field of Information and Communications Technology (ICT) under the guidance of the MITT.²²⁸

4.3 Industry

The ethics assessment in Chinese industry is basically embodied in the corporate social responsibility (CSR). This section discusses how Chinese industrial businesses engage in CSR. The Research Center for Corporate Social Responsibility in CASS (CASS-CSR, established in 2008), which is the only official national research institute working on CSR-related theory study and research, observes and comments on the CSR performance of industrial businesses in China. CASS-CSR has published the *Research Report on Corporate Social Responsibility of China*²²⁹ (also known as the CSR Blue Book) every year since 2009. This research uses an internationally used CSR index system in the study and evaluates the CSR development indicators of corporations²³⁰ based on the CSR-related information actively made public by corporations such as CSR reports, financial reports and websites of the corporations. By showing the CSR development indicators of China's top 100 corporations (which also describes the top 100 state-owned enterprises, top 100 private enterprises and top 100 foreign-funded enterprises in China) the Blue Book demonstrates the CSR performance of large Chinese corporations.

The Blue Book received much criticism after being introduced. Major criticisms include: CSR cannot be ranked because there is no single universal standard that can be used to evaluate corporations in different fields and of different sizes; the sample used in the Blue Book is too small because it uses only 300 corporations in total while there are more than nine million of enterprises in China; the general evaluation is not determined among enterprises in the industry so the authenticity of the result is problematic; the judgement toward private enterprises is unjust as it is conflicts with some other reports from other official governmental or government-affiliated public institutions such as the All China Federation of Industry & Commerce²³¹ etc.²³² Despite the criticisms, the Blue Book provides a general view on the CSR performance of Chinese enterprises. According to the Blue Book 2014, Chinese CSR is developing rapidly but still on a relatively low level. The CSR development indicator in the year 2009 (when the Blue Book was first issued) was only 15.2, on the level of bystander, which effectively means that no CSR was performed. The latest Blue Book shows that by 2014 this indicator has increased to 32.9, which is in the level of beginner. Looking specifically at the top 300 corporations, only 14 (4.7%) have a five-star level (outstanding) of CSR performance; almost 80% percent corporations have a scores lower than 60 (three-star/chaser level or lower); and almost half of the corporations are still on the bystander level. 3 corporations get 0 score, which means they have made no information public about their CSR. In the light of the Blue Book, state-owned enterprises perform much better than foreign-funded enterprises and private enterprises, whose average score is the lowest among the three categories, and the gaps between each category are increasing. Additionally, among foreign-funded enterprises in China, there is a remarkable regional difference: Eastern Asian enterprises (South Korean, Taiwanese which are on the level of front-runner and Japanese on

²²⁸ <http://www.ccsa.org.cn/english/>

²²⁹ 中国企业社会责任报告（蓝皮书）

²³⁰ According to the CSR development indicator, corporations are categorized into 5 levels (index from high to low): Outstanding (卓越者), Front-runner (领先者), Chaser (追赶者), Beginner (起步者), and Bystander (旁观者).

²³¹ 中华全国工商业联合会

²³² <http://finance.sina.com.cn/roll/20111110/102410789536.shtml>

the level of chaser) perform much better European and American (German on the level of chaser; American, British and French are on the level of beginner) enterprises. In terms of the content of CSR performance, state-owned and private enterprises perform better in publicising financial-related and law/regulation-related information but do less well in management-related or environmental information. In contrast, foreign-funded enterprises focus more on publishing information about supplier management.²³³

Since 2011, CASS-CSR has also published the White Book of Chinese CSR Reports²³⁴ (also known as the CSR White Book) reflecting the CSR reports of Chinese corporations of the previous year. In the White Book, researchers evaluate, grade, and rank the CSR reports regarding different aspects and generally describe the development stage characteristics of Chinese CSR reports and performance. The White Book 2014 shows that CSR is gaining more attention among Chinese enterprises: in 2014 there are 1526 CSR reports from enterprises as compared to 688 reports from the White Book 2010. According to the White Book 2014, enterprises tend to address CSR information concerning charities but most reports have a problem of homogenisation, namely many reports fall into a stereotype but substantive issues are not well recognised by the enterprises. Furthermore, though there are various reference standards used in the CSR reports, the lack of third-party comments is a problem. The reliability of the reports could therefore be improved. Another problem is the underperformance of the balance of the reports, which means that apart from a small minority, most CSR reports only stress the good performance of the enterprises but omit the problems and shortcomings.²³⁵

5 Professional groups and associations in the R&I field

This chapter discusses the role in ethics assessment of R&I by professional associations in R&I or the ethics assessment thereof. The chapter will not focus on the national science academies, since these organisations have already been discussed in chapter 3.

5.1 National associations for R&D professions

The following are the most significant national associations in China for professionals whose work includes research and development.

- The China Association for Science and Technology (CAST)²³⁶ is the largest national non-governmental organisation of scientific and technological workers in China. Due to its 201 member societies and nationwide local branches, CAST maintains close ties with millions of Chinese scientists, engineers and other people working in the fields of science and technology. The major aims of CAST are to improve the development and understanding of S&T in China, and to conduct science popularisation and S&T consulting.²³⁷ CAST includes a Special Committee on the Ethics and Rights of Science and Technology Workers²³⁸ which conducts the development and supervision of the R&D integrity of Chinese S&T scholars and also improves the scientific ethics through institutions and regulations.²³⁹

²³³ <http://world.people.com.cn/n/2014/1114/c1002-26023334.html>

²³⁴ 中国企业社会责任报告白皮书

²³⁵ <http://finance.sina.com.cn/china/20150115/162421307025.shtml>

²³⁶ 中国科学技术协会

²³⁷ <http://english.cast.org.cn/n1181872/n1257426/16297382.html>

²³⁸ 科技工作者道德与权益专门委员会

²³⁹ <http://zt.cast.org.cn/n435777/n435799/n13518146/n13518511/13522275.html>

- The China Society for Environmental Sciences²⁴⁰ is a national-level non-governmental organisation engaged in environmental protection. It is a first-grade professional association within the PAST and is affiliated with the Ministry of Environmental Protection. It provides scientific services for government decision-making and promotes the development of and innovation in environmental scientific technologies.²⁴¹
- The Chinese Medical Association²⁴² (CMA) is a national academic organisation in the field of medical science and technology. It is an important social force linking medical professionals and the government. Related to ethics assessment, its main responsibilities include implementing medical project evaluations and reviews, and the assessment of decisions about science and technology projects.²⁴³

5.2 National associations for (ethics) assessors

There are a number of Chinese national organisations for professionals working in ethics assessment and related areas (such as general ethics, medical ethics, technology assessment, impact assessment, etc.).

- The Chinese Society of Medical Ethics of the CMA²⁴⁴, established in 1988, is one of the specialty societies of the CMA focusing on life science ethics and working on expediting the development of life science ethics systems in China. It issued the first ethics code for medical scientists and workers in China, the *Declaration of the Chinese Society of Medical Ethics of the Chinese Medical Association*²⁴⁵(1988). It also has a Committee on Medical Ethics Regulation²⁴⁶ which works on exploring and raising medical ethics norms. Under the work of the Society of Medical Ethics, local medical ethics committees are also established in provinces and big cities. The norms and regulations drafted and issued by the Society of Medical Ethics include *the Organizational Rules of Hospital Ethics Committees*²⁴⁷ (which led to ethics committees being established in many hospitals), and *the Regulation for high-tech using ethics in medical uses*²⁴⁸, and so forth.²⁴⁹
- The Chinese Bethune Spirit Research Association²⁵⁰ is a national academic and non-profit social organisation. It studies the ethical example of Norman Bethune and aims to build a good ethical environment among medical institutions and workers in China.
- The China Association of Environmental Protection Industry²⁵¹ (CAEPI) is a social organisation voluntarily formed by scholars and institutions working in the environmental protection industry within China. Its effective business body is the Ministry of Environmental Protection of China. CAEPI investigates the environmental protection industry all over China and assesses environmental protecting technologies. It also participates in drafting plans and policies for the development of the

²⁴⁰中国环境科学学会

²⁴¹http://www.chinaces.org/cn/zh_xhjs/zh_xhjs_xhgz.html

²⁴²中华医学会

²⁴³<http://www.cma.org.cn/ensite/index/index.html>

²⁴⁴中华医学会医学伦理学分会

²⁴⁵中国医学会医学伦理学会宣言

²⁴⁶医学伦理学会伦理法规委员会

²⁴⁷医院伦理委员会组织规则

²⁴⁸医学（用）高技术道德规范

²⁴⁹<http://medicaethics.cma.org.cn/index.asp>

²⁵⁰白求恩精神研究会

²⁵¹中国环境保护产业协会

environmental protection industry, and norms and regulations for the industry's work. It also organises the China International Environmental Protection Exhibition & Conference²⁵², which exhibits and popularises technologies, products and services related to environmental protection.²⁵³

- The China Association for Environmental Impact Assessment²⁵⁴ (CAEIA) is a national and non-profit social organisation affiliated to CAEPI. It is voluntarily composed by companies and institutions whose business concerns the EIA, local environmental impact assessment associations, EIA engineers, and experts and scholars who work in or are enthusiastic about EIA work. CAEIA manages the EIA industry generally, gives advice to the government about EIA work, acknowledges the public with EIA progress in China, promotes the work ethic and integrity of EIA professionals, and collaborates with international EIA institutions, organisations and associations.²⁵⁵
- The China Wildlife Conservation Association²⁵⁶ (CWCA) is a national social organisation affiliated with the CAST and under the leadership of the State Forestry Administration (which is an administration under the ministries and commissions of the State Council).²⁵⁷ The CWCA's major responsibility is to help members observe conservation laws and policies, conduct scientific research, provide technical consultation on wildlife resources management and raise funds for wildlife conservation.²⁵⁸
- The China Association for Ethical Studies (CAES)²⁵⁹ is a national non-governmental and non-profit academic group administered by the CAS. CAES is voluntarily composed by ethics scholars and social workers working in ethics. It organises research into, and the study of ethical theories and collaboration between both domestic and international professional institutions. CAES has subsidiary societies focusing on different scholastic subjects and local subordinates.
- The Environmental Ethics Society of China National Association for Ethical Studies,²⁶⁰ also known as the Chinese Society for Environmental Ethics (CSEE),²⁶¹ is a subsidiary unit affiliated to the CNAES. The major roles of the CSEE include studying basic theories and practical issues of environmental ethics (especially the issues related to the environmental protection and sustainable development of China), popularising thoughts and theories of environmental ethics, participating in environmental campaigns, conducting investigations of environmental issues, and providing theoretical suggestions and advice to the government and companies on related issues.²⁶²
- The Chinese Society for Dialectics of Nature/Philosophy of Nature, Science and Technology (CSDN/PNST),²⁶³ which is a part of the CAST, is a non-profit academic association composed of scholars specialising in natural dialects and scholars working

²⁵²中国国际环保展

²⁵³<http://www.caepi.org.cn/>

²⁵⁴环境影响评价行业分会

²⁵⁵<http://www.caeia.net/gyfk/gzgc/index.htm>

²⁵⁶中国野生动物保护协会

²⁵⁷国家林业局

²⁵⁸<http://www.cwca.org.cn/index.html>

²⁵⁹中国伦理学会

²⁶⁰中国伦理学会环境伦理分会

²⁶¹中国环境伦理学会

²⁶²<http://www.njqdl.net/lunli/Association.asp?action=regulation>

²⁶³中国自然辩证法研究会

in different fields including natural science, engineering, philosophy, and social science who are interested in natural dialectics, and who voluntarily participate. Currently, the CSDN has local societies all over China and 34 professional committees along with eight working committees by 2012 (including committees preparing to be established). Among the professional committees, there is the committee on science, technology and engineering ethics,²⁶⁴ the committee on life ethics,²⁶⁵ the committee on philosophy of science,²⁶⁶ and the committee on environmental philosophy.²⁶⁷

- 5TU²⁶⁸ is an alliance for research on ethics of technology that comprises five Chinese technology universities. The members are the Dalian University of Technology,²⁶⁹ the Beijing Institute of Technology²⁷⁰, Northeastern University,²⁷¹ Southeast University,²⁷² and the South China University of Technology²⁷³. 5TU, through collaboration with the 3TU Ethics Centre in the Netherlands, conducts research projects concerning ethics assessment and guidance in Chinese innovation.

6 Civil society organisations

This chapter discusses the role of civil society organisations in ethics assessment of R&I in China. First, it discusses the CSO landscape, and then reviews the role of CSOs in ethics assessment.

6.1 The CSO landscape

This section provides a brief review of the CSO landscape of China. CSOs are more commonly known as non-profit organisations²⁷⁴ in China. It discusses national legislation and regulation for CSOs, major CSOs and their societal role, and funding sources of CSO's. It also outlines the role CSO's perform in R&I themselves.

National legislation and regulation for CSOs

National regulations relevant to CSOs in China include:

- *Interim Regulations on Registration Administration of Private Non-enterprise Units*²⁷⁵
- *Regulation on Foundation Administration*²⁷⁶
- *Regulation on Registration and Administration of Social Organizations*²⁷⁷

²⁶⁴科技与工程伦理专业委员会

²⁶⁵生命伦理学专业委员会

²⁶⁶科学哲学专业委员会

²⁶⁷环境哲学专业委员会, <http://www.chinasdn.org.cn/n1249550/index.html>

²⁶⁸5TU 科技伦理研究联盟

²⁶⁹大连理工大学

²⁷⁰北京理工大学

²⁷¹东北大学

²⁷²东南大学

²⁷³华南理工大学

²⁷⁴非营利性组织

²⁷⁵民办非企业单位登记管理暂行条例,

<http://www.lawinfochina.com/display.aspx?lib=law&id=14549&CGid=>

²⁷⁶基金会管理条例, <http://www.lawinfochina.com/display.aspx?lib=law&id=3463&CGid=>

²⁷⁷社会团体登记管理条例. <http://www.lawinfochina.com/display.aspx?lib=law&id=5613&CGid=>

According to the three regulations, civil social organisations are exposed to a two-level administration. On the one hand, they are managed by the registration administration organs²⁷⁸ which are the civil affairs department²⁷⁹ of the people's government at the corresponding level; on the other hand, CSOs are also managed by the governing units²⁸⁰ which are the relevant departments of, or organisations authorised by the State Council or local governments (at or above the county level). This somewhat hinders the establishment and development of CSOs in China and creates the problem that the best-developed CSOs are always supported by the government. Thus, the identities of these organisations as CSOs become problematic. Nevertheless, provinces, autonomous regions and municipal cities can make local policies about CSOs, and some regions such as Guangdong, Guangzhou, Guangxi, Yunnan, etc. have already introduced local policies that facilitate the registration of CSOs.

Until now, there is no national law for the establishment and management of CSOs. However, there have been calls by some scholars, politicians (such as NPC Standing Committee members and CPPCC members) social activists and CSO workers²⁸¹ appealing for a national law regulating the management of CSOs and protecting their rights. The most prominent endeavour is *A Propositional Draft of China NGO Law*,²⁸² which aims to protect the rights of CSOs, regulate the development of CSOs and normalise governmental supervision.²⁸³

Major CSOs and their societal roles

The following are some examples of the most important CSOs in China with regard to the ethics assessment of research and innovation. International organisations such as *Greenpeace*, *World Wildlife Fund* and *PETA* are not included here.

Environmental organisations

- *The Green Choice Alliance (GCA)*²⁸⁴ is a coalition of NGOs in China promoting a global green supply chain by encouraging large corporations to take the environmental performance of their suppliers into account in procurement. It also encourages consumers to take the environmental performance of manufacturing enterprises into consideration when exercising their purchasing power to make green choices. The GCA currently has 50 members.²⁸⁵
- The *Institute of Public and Environmental Affairs*²⁸⁶ (*IPE*) is a major member of the GCA. The IPE was established in 2006 and it developed a Chinese pollution database²⁸⁷ to monitor corporate environmental performance.²⁸⁸

²⁷⁸登记管理机关

²⁷⁹民政部门

²⁸⁰业务主管单位

²⁸¹<http://www.charity.gov.cn/fsm/sites/newmain/preview1.jsp?ColumnID=640&TID=20150313100619428842971> ; <http://www.gming.org/article-40212-1.html>

²⁸²中国非营利组织法专家建议稿

²⁸³http://www.ssap.com.cn/mallstore/Store_BookContent.aspx?f_Id=5D8246C0DA79B37D1818FD0627E57786

²⁸⁴绿色选择联盟

²⁸⁵<http://www.ipe.org.cn/en/alliance/gca.aspx>

²⁸⁶公众环境研究中心

²⁸⁷中国污染地图数据库

²⁸⁸<http://www.ipe.org.cn/en/>

- The *International Fund for China's Environment*²⁸⁹ (IFCE) is an international environmental organisation based in the USA with branch offices in five cities in China. It was founded by a group of scientists and professionals to ensure a healthy global environment and continuous economic development by helping China solve its environmental problems.²⁹⁰
- The *All-China Environment Federation*²⁹¹ (ACEF) is a nationwide non-profit CSO composed of CSOs and individuals who are enthusiastic about environmental protection. Its main goal is to serve as a bridge between the government and the public in environment-related issues.²⁹²
- *Friends of Nature*²⁹³ is an organisation working to enhance public participation in environmental protection and supporting its members to follow local environmental issues.

Civil liberties/human rights organisations

- *The Cultural Development Center for Rural Women*²⁹⁴ is an organisation aimed at promoting development for rural women.²⁹⁵

Development (aid) organisations

- *The China Social Entrepreneur Foundation (YouChange)*²⁹⁶ is an organisation/foundation for promoting the harmonious development of human social justice. It aims to build a neo-philanthropy value chain and a more effective, just and sustainable social eco-system.²⁹⁷
- The *Non-Profit Incubator (NPI)*²⁹⁸ is a cluster of several intermediary agencies supporting the emerging grassroots social organisations in China. It promotes social innovation and helps social entrepreneurs by granting crucial support to start-up and small-sized NGOs and social enterprises.²⁹⁹

Disease charity and patient/disabled rights organisations

- The *Cancer Foundation of China (CFC)*³⁰⁰ is a non-profit, public fund-raising and national organisation dedicated to cancer control in China. It seeks donations to launch public welfare activities and promote cancer control in China.³⁰¹
- The *Chinese Organization for Rare Disorders (CORD)*³⁰² is a non-profit organisation specialising in rare diseases. It seeks to promote communication and cooperation among rare disease patients, patient organisations, medical specialists, pharmaceutical companies and governmental agencies. It is dedicated to enhancing the public understanding of rare diseases, improving the medical conditions of patients, expediting the formulation of related policies, and contributing to the development of further research into rare diseases in China.³⁰³

²⁸⁹国际中国环境基金会

²⁹⁰http://www.ifce.org/yi_en/index.php

²⁹¹中华环保联合会

²⁹²<http://www.acef.com.cn/en/>

²⁹³自然之友

²⁹⁴农家女

²⁹⁵<http://old.nongjianv.org/web/english/aboutus/center.html>

²⁹⁶友成基金会

²⁹⁷<http://www.youcheng.org/plus/list.php?tid=12>

²⁹⁸恩派

²⁹⁹<http://en.npi.org.cn/aboutnpi.aspx>

³⁰⁰中国癌症基金会

³⁰¹<http://www.chinacancernet.org.cn/Info/SortContentEn.asp?infoId=274>

³⁰²中国罕见病发展中心

³⁰³<http://www.hanjianbing.org/>

Animal rights organisations

- The *Beijing Human and Animal Environmental Education Center (BHAEEC)*³⁰⁴ is an animal protection organisation devoted to promoting animal rescue, protection education and legislation in China. It focuses mainly on pets rather than all animals, though it also refers to animals used in experiments.³⁰⁵

Labour unions

- The *Little Bird Hotline*³⁰⁶ is an organisation which specially provides legal services for migrant workers.³⁰⁷

Comprehensive foundations

- The *One Foundation*, namely *Shenzhen One Foundation*³⁰⁸ is an independent public fundraising foundation. Its target is to provide a professional and transparent public service platform. It focuses on three areas: disaster relief, children's welfare and philanthropic development.³⁰⁹
- The *Shanghai United Foundation*³¹⁰ was initiated by the NPI. It is a public grant-making foundation committed to supporting and investing in the development of grassroots NGOs.³¹¹

Role of CSOs in research and innovation

Though most CSOs in China do not have enough financial and technological conditions to perform research and innovation, several CSOs, especially medical disease-related charities and environmental organisations, spend some funds on scientific research. One example is *Beijing Ruixi Research Institution Genetic Treatment Technology for Rare Diseases*³¹² which was set up by a parent of a rare disease patient. It connects patients' organisations, researchers and professionals in the field of genetic treatment and other medical subjects. In the same field, CORD also conducts research and survey of rare disease communities and orphan drugs.

6.2 The role of CSOs in ethics assessment

CSOs as stakeholders in public discussions

The development of CSOs does not have a long history in China. Before the early 21st century, the major task of CSOs was enlightening the public to raise awareness of problems in society that the government could not solve well, especially problems about environment issues, poverty and issues associated with migrant workers. Due to the increasing transparency of government work, the earlier work of CSOs and the wide use of Internet, nowadays the public gets more information and has become more sensitive to these problems in society, while at the same time the media and scholars participate progressively in social issues, working along with CSOs or even become part of them. In this whole process, CSOs always play the role of

³⁰⁴北京人与动物环保科普中心

³⁰⁵<http://www.animalschina.org/EN/>

³⁰⁶小小鸟打工互助热线

³⁰⁷<http://www.xiaoxiaoniao.org.cn/>

³⁰⁸深圳壹基金公益基金会

³⁰⁹http://www.onefoundation.cn/en_index.html

³¹⁰上海联劝公益基金会

³¹¹<http://www.lianquan.org.cn/main.php?ac=english>

³¹²北京瑞希罕见病基因治疗技术研究所

stakeholders in public discussion, and this role is combined more and more with public participation.

CSOs as participants in ethics assessment panels and procedures

In China, the major part of ethics assessment is conducted by governmental organisations or professionals in relevant fields. CSOs are not officially invited to attend, and so CSOs do not have an obvious role in assessment. However, in many big and influential CSOs, the government or professionals also play a role - for instance, sometimes a CSO is affiliated with a ministry of the State Council, and many professionals and scholars are also members (sometimes even founders) of CSOs. As a result, CSOs in China has some role in ethics assessment but it is often indirect and not independent of the government or professional organisations.

CSOs as agents who engage in ethics assessment themselves

A number of Chinese CSOs, especially ones related to environmental protection, recognise the importance of ethics assessment but they do not engage in such assessment themselves. However, through increased collaboration among CSOs, and between CSOs and companies, as well as CSOs and the government, CSOs have recently become increasingly important agents of ethics assessment. A prominent example is the Green Choice Alliance (GCA). The GCA developed a system that responsible corporate citizens can adopt to monitor the environmental compliance records of suppliers and thus help control pollution in China. In this system, the GCA uses a procedure of audit carried out by a third party (which is not fixed) called the GC Audit.³¹³ The third party is always an accredited auditing entity and is monitored by NGO members. The GC Audit has already been used successfully by some major global companies working in China such as Apple, H&M, and Samsung. In this instance the CSO itself is engaged in the ethics assessment: it organises, arranges and supervises the assessment and is responsible for the assessment.

7 Discussion

While ethics assessment of research and innovation in China has struggled to keep up with China's remarkable growth in scientific, technological, and industrial development, there are indications that significant progress in ethics assessment is being made. The Chinese government has in recent years established numerous organisations for regulating ethics assessment and introduced many laws and regulations concerning the proper conduct of research.

The Ministry of Science and Technology (MOST) is responsible for fostering and maintaining research projects in science and technology, and for maintaining control of funds devoted to these projects. MOST also promotes integrity in research and development through its Office of Research Integrity and its advisory committees on this issue.

The National Health and Family Planning Commission (NHFPC), which was preceded by the Ministry of Health, is responsible for developing and conducting medical research. It also develops the laws and regulations for medical research. Departments within the NHFPC are

³¹³绿色选择审核

responsible for establishing the principles of biomedical research ethics and administering them. The NHFPC also has the Medical Ethics Expert Committee.

While only established in 1996, the Science Ethics Committee of the Chinese Academy of Sciences (CAS) is influential in promoting and maintaining standards of research ethics. The annual seminars on science and technology ethics it has organised since 2011 have led to the development of new regulations for research and development.

The Chinese Society of Medical Ethics was only established in 1988, and it released the first code of ethics for medical researchers in the same year. Medical ethics is now a mandatory requirement in medical training, although not as much time is devoted to it compared to similar training conducted in the US and Japan. While ethics is currently not a major part of technical education and training in China, there is a growing demand for engineering and technological ethics to be taught.

While there are numerous government policies on ethics assessment and on the need to establish and utilise ethics committees, these policies do not appear to be uniformly implemented. As mentioned in section 3.4, despite the regulations requiring hospitals to establish ethics committees, even some of the highest-ranked medical hospitals still lack such committees and the independence of some of the committees within hospitals that have established them can be questioned. Research hospitals generally have a higher standard of ethics assessment.

The concept of Corporate Social Responsibility (CSR) currently does not have the same influence as it does in many European and Western countries. It is gaining prominence, however, through the annual publication of the Blue and White Books by the Research Center for Corporate Social Responsibility in CASS (CASS-CSR) that compare the performance of companies and industries in this area. A particular problem for evaluating the CSR performance of enterprises in China is that the information made available publicly is often insufficient to accurately judge an enterprise's performance.

The central role of the Chinese government in administering research and development and its control over research institutions does not leave a major role for non-government organisations in ethics assessment. Despite this, in areas such as environmental protection, NGOs are beginning to make an impact. The Green Choice Alliance that promotes environmental sustainability in the supply chain is one example.

Animal experimentation is one area where further progress would be welcomed. The proposed law on animal protection is still to be enacted, and the regulations on the use of animals in experiments does not give specific details about the proper treatment of animals in research.