

Understanding Vaccine Innovation System in India

Book Review

Changing Profile of the Indian Vaccine Innovation System, by **Kunal Sinha**; Segment Books, New Delhi, 2017, 332 pages, ISBN: 9789381513064.

This book depicts about the issues of vaccine innovation and immunization in India. It has multidisciplinary dimension approach which try to assimilate the national innovation system to international system of innovation. Basically, this approach has occurred due to international collaboration in Science and Technology (S&T) which leads to involvement of new actors especially from developing countries i.e., India and China. The effect of this approach can be seen in flow of FDI in R&D, global knowledge networks, migration and circulation of knowledge workers. Moreover, the author argues that the innovation process is intervened through dependencies arising from international S&T order and interdependencies generated by the globalization process and emerging technologies. Beside this, it also focuses on the growth of the vaccine based on existing pattern and socio-economic dimensions of vaccine in India. It also covers the issues of access, transfer of technology in terms intellectual property rights, the collaboration, and networking and changing trend in vaccine innovation system.

However, this book has been compiled into seven different chapters with different aims and objectives. The first chapter of this book deals with introduction part which introduces the status of biotechnology in India and evolution of vaccine innovation system and their stages in India. Similarly, the second chapter reveals about the existing literature on the topic. The literature contains with the development of S&T research in the context of biotechnology, vaccine and innovation system and situating the interrelationship among these three determinants. The growth of the vaccine in the context of disease pattern highlights the economic dimensions of the vaccine

in India are discussed in chapter three. The fourth chapter talks about the issues of access, transfer of technology in the context of intellectual property rights (IPRs). Accordingly, fifth and sixth chapter scrutinized the collaboration and networking and the changing trend in vaccine innovation system.

The first chapter of this book covers the history of vaccine development. It also analyses demand and supply of knowledge development of a vaccine, which has modified the structure of the relationships among firms and other agents. It emphasizes on the evolution of the system and tracks the developments in the network itself in the vaccine innovation process in India. Further, in the second chapter author shows that, R&D in biotechnology specially firms which are engaged in the vaccine development done by private sector effects to the nature of patents and IPR. The government of India plays role through their scientific programs and policies. It has initiated many biotechnology projects in university and public institutions to cater to the need of emerging diseases, which can be prevented or eradicated through vaccines. The third chapter gives more details on the role of a university, public institutions and the private sector in vaccine innovation system in India. The chapter represents linkages between different stakeholders and interrelationships between the vaccine R&D, disease pattern, and socioeconomic conditions. It makes an attempt to study the vaccine innovation system as process and probes the role of the actors, agencies, institutions, and networks involved in vaccine development.

In addition chapter four discusses about the access to vaccine and Intellectual property rights in India. The author argues that Biotechnology Regulatory Authority of India is proposed to be an independent, autonomous and professionally led body that will be provided a single window mechanism for the safety assessment of genetically engineered products and process. Moreover, the fifth chapter deals with the networking of Indian vaccine innovation system, and the author argues that the funding for effective PDPs should be preferentially encouraged and there is a need to work in close cooperation to achieve

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the desired goal for health for all in the coming future. The chapter present evident that innovation is not a single action but a total process of interrelated sub-process. The sixth chapter depicts changing trends and patterns in vaccine innovation system in India whereas author argue that, vaccine innovation in India is successful in both the public and the private sector in the context of the R&D mechanism and infrastructure. The universities and public institutes are engaged in the numerous number of vaccine R&D related to human and animal health without any major resource challenge. The scientific and functional obstacles are similar for both private as well as public sector.

Finally, the book concludes in seven chapter and author conclude with the point that, the vaccine innovation system would be effective only if the immunization process is carried out properly because ultimately the vaccine developed has to eradicate disease. Thus, the government should articulate a separate and exclusive vaccination or immunization policy. In India, still, the immunization

process has many functioning impediments. Hence, to see the vaccine innovation system in India, there is a need to change the approach of components and move towards national to international. If, achieve the target “health for all” there has to be integrated all components and make workable. Last but not the least, it is not intended to argue that book is good or bad, but the book very competently sketches the issues of vaccine innovation and immunization.. Also, it is relevant for health sector research especially for those researchers who are working in the area of biotechnology and IPR related issues because presently, vaccine industry attracts greater academic attention.

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