

1.1 IMPORTANCE OF ANCIENT KNOWLEDGE

Ancient knowledge is the accrued knowledge over several generations and preserved in formal and informal means. Formal means include documented knowledge and informal means include shared values and practices through oral traditions. Sadly, as explained above, ancient Indian knowledge has been relegated to millions of palm manuscripts lying scattered all over the country and it is gathering dust. While several scholars are engaged in the process of bringing the hidden knowledge out of these manuscripts by researching and republishing such works, it does not match the scale required to make a meaningful impact. It is a herculean proposition to uncover the knowledge and bring it to the attention of modern society. On the

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other hand, the oral traditions continue in some rural pockets and are at the threat of getting extinct for want of patronage. The question in front of us is, "Does any society need to preserve, protect and pass on the ancient knowledge to the future generations?"

The thinking patterns and the repository of knowledge created by the forefathers in any society enable the current generation to understand the thought processes and frameworks of the previous generations. It will allow them to analyse the received wisdom in a contemporary context and identify new opportunities to assimilate the accrued wisdom and synthesize new knowledge. Therefore, keeping the current generation in the dark about the contributions of the ancestors is an inefficient, and a short-sighted option for society. Ancient knowledge serves multiple roles for society. Figure 1.1 schematically captures these.

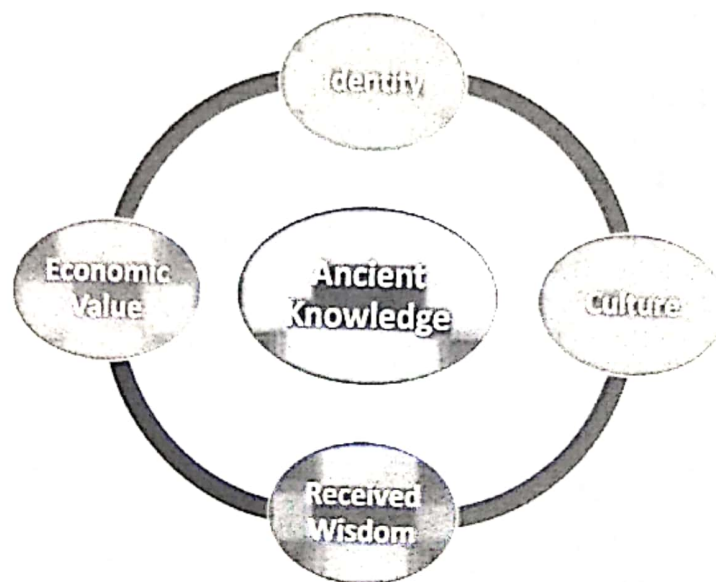


FIGURE 1.1 Importance of Ancient Knowledge

Identity

The quintessential value that ancient knowledge brings to society is the identity it provides to fellow members of the society. Essentially it defines the context for several aspects of the day-to-day living of every individual. The social practices and norms have continuity as most

of them are transmitted from generation to generation through practices and supporting knowledge repositories. Therefore, preserving this knowledge and baton passing them on to the next generation is an important step for contemporary society. In the absence of this continuity, individuals lose their conviction on several living practices. They lose their ability to 'meaning making' of much of the knowledge. Eventually it challenges one's own identity and that of the society.

Culture

Culture has several dimensions. In a direct sense, it is the manifestation of human intellectual achievement regarded collectively by society over time. From a social perspective, culture is nothing but the set of ideas, customs, and behaviour of society. In other words, culture provides a sense of identity at a societal level by providing a common medium for communication and the transaction of ideas. The prevailing knowledge and the literary traditions play a significant role in shaping the culture of the society. If the underlying knowledge systems are abruptly withdrawn from society, the cultural practices will be rudely jolted. It may create distortions and discontinuities in societal progress.

Received Wisdom

Knowledge and innovation are in a continuum. Innovation and new knowledge creation in any society is 'path-dependent'. What it essentially means is that the road travelled so far determines the future path. Without the continuity of thoughts, it is very difficult to make further progress in terms of new ideas. The other equally important issue is the risk of reinventing the wheel. When the benefit of prior knowledge and the thought process is lost by society, it will lead to reinventing the wheel, making innovation and new knowledge creation inefficient. In this context, ancient knowledge plays the valuable role of 'received wisdom' and provides a head start to a society to march on the highway of innovation and new knowledge creation.

Economic Value

One of the compelling arguments in support of the ancient knowledge systems is the huge potential it offers from an economic value standpoint. The emerging world order puts greater emphasis on knowledge society. The prevailing 'military power' will give way for 'knowledge power' and such nations who demonstrate the superiority of knowledge traditions are bound to lead the rest of the world. Transforming knowledge into economic value has been fully formalized with the global intellectual property rights regulations and patent laws. Therefore, the ancient knowledge system will be beneficial to a country like India (see IKS in Action 1.1 at the beginning of the chapter for an illustration of this idea).

Let us see an example to understand this aspect. The US patent and trademark office granted patent rights on knowledge of the usage of pigeon pea extracts for treating diabetes, hypoglycemia, obesity, and arthero-sclerotic cardiovascular disease (clogged arteries) to Insmmed Inc, based in Richmond in Virginia. The company claimed its novelty in the invention of pigeon pea extracts for treating these diseases. In the patent applications, Insmmed

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- ♦ Unless we preserve the ancient knowledge, we will not be able to prevent the spillover of our economic value arising out of our ancient knowledge.

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acknowledged only a handful of uses of pigeon peas in traditional medicines by citing some references of journal articles that appeared in 1957 and 1968 that describe the effects of pigeon pea and its extracts on blood sugar. The patent application did not include references to the traditional use of pigeon peas in the treatment of the mentioned diseases.

Pigeon pea (botanical name *Cajanus cajan*) is commonly known as arhar or red gram in India. There are several instances of the use of pigeon pea extracts in traditional medicines in India. A study of plant medicines by researchers in the department of pharmacology at the All-India Institute of Medical Sciences (AIIMS) tested pigeon pea extracts as they are used to treat diabetes in Ayurvedic medicines. The scientists at the Council of Scientific and Industrial Research (CSIR) observed that there is a need to gather strong evidence from our traditional texts to challenge such patent rights. Unless we preserve and be aware of the ancient knowledge, we will not be able to prevent the spill over of our economic value arising out of our ancient knowledge¹.

1.2 DEFINING INDIAN KNOWLEDGE SYSTEM

Indian Knowledge Systems (IKS) is a generic phrase that covers practically everything about India. For a nation with more than 5000 years of recorded history, abundant cultural and archaeological artifacts, literature, and social and community practices defining what constitutes Indian Knowledge is itself a huge challenge. Literature, cultural and social practices, historical evidence, and other such knowledge assets available in all Indian languages, dialects, and geographical regions will all technically fall under the ambit of IKS. The other aspect of the issue is the time dimension. Knowledge is continuously synthesized by any society. Knowledge assets available in India from the pre-historic times to the current day will all qualify to be part of the IKS. Therefore, it requires an unambiguous scope for defining IKS for this book.

Arguably, IKS can evoke different meanings to different stakeholders. The term IKS has three words in it. To better understand what we mean by IKS in the context of this book, we shall analyse each of these words separately.

Indian

By this term, we mean the indigenous sources of knowledge generated by the Indian society. The current political formation called 'India' is of recent origin and it alone does not qualify to be called 'Indian'. The term 'Indian' points to the undivided Indian subcontinent (Akhaṇḍa Bhārata). We mean the geographical area spanning from Burma on the east to modern-day Afghanistan in the west and Himalayas in the North to the Indian Ocean in the south. This region has common cultural, literary, and social practices, and has witnessed a continuous exchange of people, and ideas among them throughout the history of undivided India. Despite several political formations and princely states ruling this entire region for the last several hundred years until the consolidation begun from the 16th century CE, the society was unified under the common umbrella of social practices. Cāṇakya could get educated in Takṣaśilā in the western part of the sub-continent and be instrumental in establishing a powerful Mauryan empire with Pāṭaliputra as the capital in the Eastern part. Similarly, Pāṇini, a Sanskrit Grammarian from Gāndhāra in the North-Western corner of undivided India (now in Pakistan) could influence the thinking of people in the entire country on the Sanskrit language.

A second aspect to this is only such knowledge synthesized, codified, and made available by the 'Indians' is considered Indian knowledge. This implies that they ought to have been part

of the Indian subcontinent, born and lived there, and are part of the knowledge system in an integral fashion. This is especially important because India witnessed several foreign travellers who visited its universities, stayed for some time and wrote about the country, the knowledge, and cultural practices. These have significantly contributed to the export of this knowledge to the west and other parts of the world. For example, some reports have extensively studied the role of such authors in taking mathematical thinking to the west via the Arab world². These are considered as 'about IKS' rather than IKS itself.

Knowledge

The second component of IKS is the 'knowledge', which is always tacit. It primarily arises in the form of the wisdom of the knowledge seekers. It is obtained by the insights gained by personal experiences with life situations, facing problems, and coming up with means of solving them. At other times, one obtains knowledge by means of intense observation of events, experimentation, conjecturing, and analysis. Knowledge may or may not be converted to a literary format. The tacit knowledge can be preserved and transmitted through an oral tradition without loss. India has a rich tradition of folklore practices even to date, that belongs to this category. While both these forms of knowledge are equally important and valuable it is impossible to formally study knowledge transmitted through oral traditions. Therefore, by 'knowledge', we mean in this book, a formal repository of knowledge available in literary sources.

The tacit knowledge gained by a seeker is eventually transmitted systematically in the form of some 'explicit' knowledge. This happens by way of proposing a new theory, framework, or literary work. Furthermore, knowledge pervades all three domains: spiritual, religious, and others addressing social and day-to-day issues. We can summarise the term 'knowledge' as that emanating from the wisdom and insights arising out of deep experiences, observation, experimentation, and analysis and validated, improved, and augmented further.

System

By 'System' in IKS, we mean a structured methodology and a classification scheme to access the available corpus of knowledge. By its inherent nature, knowledge could be accessed in any manner depending on the interest, purpose, and capacity of the seeker. For an uninitiated, this vastness could throw a challenge as the seeker may be clueless as to where to begin and how to proceed. Therefore, the available knowledge needs to be collected, grouped, and arranged logically. Codification and classification of the available knowledge using a definite framework would constitute one dimension of the word 'System' in IKS. The other important requirement is the interconnection between the part of the knowledge in the classification framework. The framework used to represent knowledge should also provide some logical relationships between the different parts of the proposed framework. This helps easy understanding of the overall contribution of the knowledge and how the different components of the knowledge complement each other. We take up this issue for discussion in the next section and present a systematic approach to classifying IKS for this book.

1.3 THE IKS CORPUS – A CLASSIFICATION FRAMEWORK

There are many ways to define and identify what constitutes IKS. For example, one approach is to merely pick the important topics representative of the knowledge corpus such as the Vedas,

SUMMARY

- ▶ The ancient knowledge in India was preserved and transmitted 'orally' until a few centuries back. There was a rather abrupt end to this process of knowledge transmission.
- ▶ It is very important to know the thinking patterns and the repository of knowledge created by the forefathers as it provides numerous values to society.
- ▶ Transforming knowledge into economic value has been fully formalized with the intellectual property rights regulations and patent laws. This is one area where the ancient knowledge system will benefit a country like India.
- ▶ Knowledge is a systematic body of literature emanating from the wisdom and insights arising out of deep experiences, observation, experimentation, and analysis and validated and augmented over time.
- ▶ The knowledge is available in both formal literary sources and informal non-literary sources.
- ▶ Among the literary sources, we can broadly identify three categories: Sanātana-Dharma literature, presented mainly in the Sanskrit language, literature on other dharmic traditions, and a large repository of knowledge in other Indian languages and dialectics.
- ▶ Buddhist and the Jain literature have significantly contributed to IKS from 500 BCE. The Jain sacred literature consists of canonical texts. 'Gaṇitānuyoga', a portion of their literature is dedicated to mathematics.
- ▶ In each of the regional languages, there is a huge corpus of sacred and other literature.
- ▶ A classification framework for Sanātana-Dharma literature, referred to as 'Caturdaśa-Vidyāsthāna', has organised the knowledge repository under 14 major divisions.
- ▶ The Vedas are the primordial source of knowledge in the scheme of IKS. Vedāṅgas provide complementary tools and skills to fully appreciate the content and also benefit from the Vedas.
- ▶ Normal methods used to date literature are grossly inadequate and misleading in the case of IKS.
- ▶ IKS literature shows that a single work can provide simultaneously ideas on three streams seamlessly: Spiritual, Religious, and Material.
- ▶ On account of the oral transmission, IKS literature is fundamentally a concise piece of work. To make it concise, specific structural aspects are deployed.

REVIEW QUESTIONS

1. What is the current status of IKS in India? Briefly explain the reasons for its current status.
2. Do you think ancient knowledge is useful for a society? Support your answer with suitable arguments.
3. Define the term 'Indian Knowledge System'. Briefly explain what you understand by each word in this term.
4. Outline the broad classification of the IKS repository. How do the categories in the classification framework differ from one another?
5. What do you understand by the term 'Caturdaśa-vidyāsthāna'? Briefly explain the various components of this framework.
6. Comment on the statement, "The components of 'Caturdaśa-vidyāsthāna' are all related to the Vedas".
7. Briefly state the salient features of IKS when viewed from a historicity point. What are the areas of key contributions?

Concepts and Applications



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