



# Beyond Pareto Efficiency: Rethinking Social Welfare through Indian Knowledge System

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## Abstract

*This paper uses the tools of welfare economics to Indian Knowledge Systems (IKS) in order to provide an analysis of the concept of maximising social welfare. Arthur Cecil Pigou and Amartya Sen who developed welfare economics, examines social welfare through concepts such as Pareto Optimality and social welfare functions. This paper focuses whether Indian knowledge systems contribute to the maximization of social welfare. Although conventional economic models cover individual utility and efficiency, Indian knowledge system is shaped by conceptions of well-being, ethical responsibility and ecological balance, raising the most important question regarding the adequacy of pareto efficiency, which neglects issues of distribution, sustainability and long-term welfare. This creates a conceptual gap between efficiency and equity, which is addressed by this paper. By doing so, the paper contributes to the ongoing debate on redefining welfare beyond efficiency-centric models. The study adopts a comparative analytical approach to examine how far welfare economics can assimilate the holistic conception of welfare articulated in Indian knowledge systems. The findings suggest that for overcoming current development challenges, IKS offers a broader interpretation of welfare maximisation, which compliments and extends the conventional welfare economics framework.*

**Keywords:** Pareto optimality, welfare economics, Indian Knowledge System, social welfare, equity, sustainability

## 1. Introduction

Social welfare is the ultimate concern of economic policy, but its meaning is contested. Welfare may refer to utility, income, capabilities, dignity, social participation or ecological security. Consequently, the relevant question is not merely how much an economy produces, but who benefits, who bears the costs and whether present gains remain possible in the future.

Pigou's The Economics of Welfare established a foundation for analysing social costs and externalities. It showed that private benefits may diverge from social benefits and that public intervention may be justified when market decisions impose costs on others (Pigou, 1920). Pareto efficiency later supplied a criterion for identifying changes that make at least one person better off without making anyone else worse off.

This paper examines whether selected ideas from Indian Knowledge Systems can extend welfare analysis beyond this efficiency criterion. IKS is treated as a diverse body of philosophical, scientific, social and ecological traditions, not as a single perfect system. The paper focuses on dharma as responsibility, ahimsa as non-harm, lokasangraha as collective welfare and ecological balance. It argues that Pareto efficiency is necessary for identifying waste but insufficient for judging comprehensive social welfare.

## 2. Literature Review & Research Gap

Classical welfare economics links allocation with well-being through efficiency and utility. Pareto's criterion avoids interpersonal comparisons, but it cannot rank two efficient allocations or determine whether the initial distribution of resources is just. Bator (1957) and Arrow and Hahn (1971) show that welfare results depend on assumptions regarding competition, information, markets and externalities. These assumptions make efficiency a useful benchmark, not an automatic description of real welfare.

Sen expanded the literature through social choice, inequality and the capability approach. Capabilities refer to the real freedoms people possess to achieve valuable functionings such as being healthy, educated, secure and socially included (Sen, 1970, 1985, 1999). This approach is important because equal resources do not produce equal opportunities. Robeyns (2005) notes that the capability approach offers a broad evaluative language while leaving difficult questions about selection and measurement.

Sustainability literature adds an intergenerational dimension. Pollution, resource depletion and ecological damage can increase current income while reducing future capabilities. UNESCO (2023) recognises the possible contribution of living heritage and traditional knowledge to sustainability, but such claims require evidence and contextual assessment. Government of India initiatives have promoted interdisciplinary research on IKS (Government of India, Ministry of Education, 2022).

The research gap is that welfare economics and IKS are generally examined separately. IKS research often describes holistic well-being and ecological harmony without connecting them to Pareto efficiency, social welfare functions or distributional analysis. Welfare economics has tools for efficiency and externalities but rarely draws on Indian concepts of duty, non-harm and collective maintenance. This paper addresses the gap through comparative conceptual analysis. Its questions are: Is Pareto efficiency adequate for maximising welfare? What are its distributional and sustainability limits? How does dharma, ahimsa and lokasangraha broaden welfare? Can IKS extend economic analysis without replacing it?

## 3. Theoretical foundation of Welfare Economics

A Pareto improvement makes at least one person better off without harming anyone else. An allocation is Pareto optimal when no such improvement remains. The criterion is useful because it identifies avoidable waste without requiring interpersonal utility comparisons. Its limitation is that it identifies a frontier, not the fairest point on that frontier. A highly unequal allocation may be Pareto efficient if improving poorer groups requires reducing the gains of richer groups.

A social welfare function, represented as  $W = W(U_1, U_2, \dots, U_n)$ , combines individual welfare into a social evaluation. Utilitarian functions may sum utilities, while inequality-sensitive functions give greater weight to the worse-off. These weights express ethical judgments. Sen's work shows that utility alone may not capture health, freedom, dignity and social inclusion (Sen, 1973, 1985). Welfare analysis therefore requires attention to the information used to judge lives.

## 4. Limitations of Welfare Economics

The first limitation is distributional blindness. Efficiency does not establish equality, minimum capabilities or legitimate property rights. An economy can use resources efficiently while poor groups remain excluded from education, healthcare, land or political influence.

The second limitation concerns sustainability. Present consumption may produce current benefits by depleting groundwater, soil, forests or biodiversity. Future people then face reduced opportunities. Ecological assets should therefore be included as conditions of welfare rather than treated only as external constraints.

The third limitation is individualism. People are embedded in families, communities and institutions. Care, trust, public health and community security are not fully captured by private preferences. Preferences may also adapt to deprivation, so the absence of expressed demand does not prove the absence of need.

The fourth limitation is ethical invisibility. Efficiency cannot determine whether displacement, pollution or exploitation is acceptable. Efficiency, justice and sustainability answer different questions. A complete welfare framework must make its ethical commitments explicit.

## 5. Indian Knowledge Systems as a Welfare Framework

IKS includes diverse traditions concerning philosophy, medicine, agriculture, water, governance, ecology and education. Its analytical use requires selection and critical testing; it must not be presented as homogeneous or beyond criticism.

Dharma may be understood as responsibility and appropriate conduct. It asks what obligations economic agents and governments have towards others and the natural world. Translated into contemporary policy, it supports accountability, non-discrimination, responsible resource use and intergenerational responsibility.

Ahimsa, or non-harm, directs attention to costs hidden behind economic gains. A project may increase output while causing pollution, displacement or health damage to communities with limited influence. Ahimsa requires harms to be identified, reduced and fairly addressed.

Lokasangraha is associated with welfare, cohesion and maintenance of the social order. It connects individual conduct with collective conditions and challenges the idea that social welfare is merely the sum of private gains. It highlights cooperation, public responsibility and shared resources. Its contemporary use must remain compatible with constitutional rights, democratic participation and equality.

IKS also offers an ecological perspective in which human welfare depends on nature. Traditional knowledge may inform water, agriculture and conservation policy, but practices require scientific validation, community consent and distributional assessment.

## 6. Comparative Analysis

The comparison is not between modern economics and tradition as mutually exclusive systems. Welfare economics includes social choice, inequality analysis, environmental economics and capabilities. IKS is not a complete economic model. The stronger argument is complementarity.

Pareto analysis can be a first screen: are resources wasted and can a mutually beneficial gain be achieved? A second screen concerns distribution: who gains and who bears the burden? A third concerns ecological continuity: are assets supporting future welfare preserved? A fourth concerns legitimacy: were affected groups heard, were harms avoidable and were responsibilities fairly allocated?

This layered procedure changes the meaning of welfare maximisation. IKS does not replace calculation; it expands what must be recognised and publicly justified.

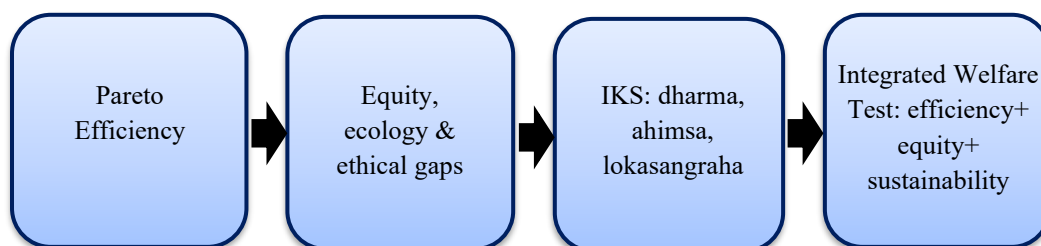


**Figure 1:** Analytical flow chart

| Dimensions    | Welfare economics         | IKS-informed extension  |
|---------------|---------------------------|-------------------------|
| Focus         | Efficiency and utility    | Holistic well-being     |
| Distribution  | Not settled by Pareto     | Equity explicit         |
| Time          | Often present-oriented    | Long-term welfare       |
| Environment   | Externality or constraint | Condition of welfare    |
| Decision rule | Efficiency frontier       | Integrated Welfare Test |

## 7. Reinterpreting Welfare Maximisation

This paper proposes the Integrated Welfare Test. A policy is welfare-enhancing only when it satisfies four conditions: productive efficiency, distributive adequacy, ecological continuity and ethical legitimacy. It is a decision framework, not a single numerical index.

Productive efficiency asks whether resources are used effectively. Distributive adequacy asks whether benefits and burdens are fairly shared and whether vulnerable groups achieve basic capabilities. Ecological continuity asks whether natural and social assets are preserved for future generations. Ethical legitimacy asks whether the policy respects non-harm, participation, dignity and accountability.

The test connects Sen's capability approach with IKS. Capabilities evaluate substantive freedoms, while IKS adds duties, collective welfare and ecological interdependence. The new perspective is therefore to replace the question "Is the allocation Pareto efficient?" with the broader question "Is it efficient, distributively defensible, ecologically durable and ethically legitimate?"

## 8. Policy and Practical Implications

The Integrated Welfare Test is only useful if it can be translated into instruments that planners, regulators, and institutions can actually apply. This section sets out five practical pathways through which the four conditions of the test — efficiency, distributive adequacy, ecological continuity, and ethical legitimacy — can be embedded in Indian policy practice.

### 8.1 Measurement: Beyond GDP

Policy evaluation should report health, learning, nutrition, water access, inequality, employment quality, gender participation, emissions, and ecological conditions alongside GDP and expenditure. India's own experience with the Multidimensional Poverty Index (NITI Aayog) and the human development framework shows that composite, capability-sensitive indicators are already administratively feasible; the Integrated Welfare Test extends this logic by requiring that ecological continuity and ethical legitimacy be reported as explicitly as efficiency and growth, rather than treated as footnotes to a headline GDP figure.

### 8.2 Project Appraisal: Widening Cost Benefit Analysis

Cost-benefit analysis for infrastructure, mining, irrigation, and industrial projects should formally incorporate environmental externalities, displacement costs, and distributional incidence — who gains and who bears the burden — rather than net social benefit alone. Environmental and social impact assessments, already required for many projects, can be strengthened by requiring an explicit ahimsa-style harm audit: an itemised account of foreseeable harms to affected communities, together with the mitigation or compensation proposed, evaluated independently of the project's efficiency case.

### 8.3 Local and Traditional Institutions of Resource Governance

Local ecological knowledge may inform water management, climate adaptation, agriculture, and biodiversity conservation, but only where it operates through community consent, scientific validation, and accountable institutions rather than symbolic invocation. Panchayati Raj institutions, water-user associations, and joint forest management committees illustrate how lokasangraha-style collective responsibility can be given legal and administrative form; strengthening their resourcing, transparency, and grievance-redress mechanisms is a concrete way of operationalising the distributive-adequacy and ethical-legitimacy dimensions of the test at the local level.

### 8.4 Institutional and Educational Reform

IKS education should avoid symbolic inclusion. Universities can bring economists, environmental researchers, historians, and communities together to test the contemporary relevance of traditional knowledge through interdisciplinary research centres, joint fieldwork, and peer-reviewed publication, rather than treating IKS as a cultural addendum to existing curricula. Regulatory bodies and planning commissions could similarly institutionalise an Integrated Welfare Test checklist within project appraisal and budget processes, so that distributive and ecological review is a standard procedural step rather than a discretionary add-on.

## 8.5 Limits and Safeguards

These applications require caution. Traditional knowledge and dharmic concepts must not be invoked to bypass constitutional rights, scientific evidence, or democratic participation; the Integrated Welfare Test is intended to widen accountability, not to substitute cultural authority for evidence-based governance. Policy pathways drawing on IKS should therefore remain subject to the same standards of transparency, contestability, and judicial and legislative oversight that apply to any other public policy instrument. Read together, these five pathways show that the reinterpretation of welfare maximisation proposed in this paper is not merely conceptual: it points toward specific, implementable changes in how India measures progress, appraises projects, governs shared resources, and trains the next generation of policy analysts.

## 9. Conclusion

Pareto efficiency remains valuable for identifying avoidable waste and mutually beneficial changes. It cannot determine whether an allocation is fair, sustainable or ethically legitimate. Selected IKS principles can widen welfare analysis: dharma introduces responsibility, ahimsa highlights harm, lokasangraha connects individual action with collective welfare and ecological interdependence connects present well-being with future capability.

The Integrated Welfare Test places efficiency alongside distributive adequacy, ecological continuity and ethical legitimacy. It does not reject welfare economics or romanticise tradition. It provides a new perspective for evaluating Indian development policy, where growth, inequality, ecological pressure and cultural plurality must be addressed together.

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