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Ten principles for transforming economics in a time of global crises

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Transformation of economic systems is widely regarded as essential for tackling interacting global crises. Unconventional economic approaches seeking holistic human and planetary well-being have transformative potential, but mainstreaming them is hampered by vested interests and intellectual lock-ins. They are also diffuse and struggle to develop sufficient discursive power to gain more widespread traction in policy. To bring coherence, we undertake a qualitative content analysis of 238 document sources from science and practice. We identify ten ecological, social, political economy and holistic principles cutting across 38 economic approaches. They include: (1) social–ecological embeddedness and holistic well-being; (2) interdisciplinarity and complexity thinking; (3) limits to growth; (4) limited substitutability of natural capital; (5) regenerative design; (6) holistic perspectives of people and values; (7) equity, equality and justice; (8) relationality and social enfranchisement; (9) participation, deliberation and cooperation and (10) post-capitalism and decolonization. We also consider opportunities and barriers to applying these principles in the context of global crises. Our results can help consolidate transformative economic approaches and support future efforts to synthesize conceptual models, methodologies and policy solutions and to validate the identified principles more explicitly within global south contexts.

The world faces a 'polycrisis'[1] of multiple interacting and compounding crises, including climate change, biodiversity loss, food and energy crises, geopolitical conflicts and ongoing repercussions of the COVID-19 pandemic. These crises severely exacerbate economic, social and health inequalities, greatly set back achievement of the UN Sustainable Development Goals[2–4] and risk runaway global failures of vital natural and social systems[1]. They are also deeply rooted in conventional economic institutions and thought[5–8]. If the world continues along its present path, it risks, as UN Secretary-General António Guterres put it, "collective suicide"[9]. Such dire warnings and urgent calls for transformative economic approaches are echoed by thousands of sustainability scientists[5], the United Nations[3,9], intergovernmental environmental panels[6,10] and business leaders[11,12].

Economics studies the production, consumption, valuation, allocation and exchange of goods and services, including their governance. Since the early twentieth century, neoclassical economics has dominated economic thinking in research, policy, education and public debate, projecting a cohesive narrative with substantial discursive power[13]. This narrative emphasizes the belief that markets optimally allocate resources without state intervention, embodies a mechanistic worldview of nature separate from people[14–16] and assumes that individuals follow maximizing behaviour according to fixed rules to

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Table 1 | Ten cross-cutting starting principles that underpin transformative new economic approaches

Category	Principle	Explanation
Holistic	(1) Social–ecological embeddedness and holistic well-being	Recognize that economies are embedded within societies and ecosystems and that the basic purpose of economics is to support human and planetary well-being.
	(2) Interdisciplinarity and complexity thinking	Acknowledge complexity and the need for interdisciplinarity in addressing economic problems.
Ecological	(3) Limits to growth	Acknowledge that economies have fundamental biophysical and biochemical limits to growth.
	(4) Limited substitutability of natural capital	Recognize that human-derived capital fundamentally depends on nature.
	(5) Regenerative design	Design economic systems to be circular and regenerative.
Social	(6) Holistic perspectives of people and values	Embed pluralistic models of values and human behaviour based on well-being, dignity, sufficiency and holistic freedom in all economic thinking, decisions and actions.
	(7) Equity, equality and justice	Consider equity, equality and justice as central questions of economic enquiry.
Political economy	(8) Relationality and social enfranchisement	Embrace pluralistic social and relational approaches that support social enfranchisement, social needs and the common good.
	(9) Participation, deliberation and cooperation	Embed participation, deliberation and cooperation as core to economic thinking and policy.
	(10) Post-capitalism and decolonization	Take post-capitalist, decolonized and post-development economic perspectives.

optimize outcomes for themselves[17]. Economic policy then becomes a matter of optimization towards market equilibria. Pursuit of affluence, reflected in gross domestic product (GDP) growth, is explicitly or implicitly the central normative goal[18].

The limits of these theorems have become increasingly acknowledged in mainstream economics through concepts such as market failures, information asymmetries, motivational diversity and complexity theory. There is debate whether such critiques signify the end of neoclassical dominance or its evolution[19,20]. Alongside these shifts, there is a growing movement of diverse heterodox, 'new' economic perspectives that (1) express holistic views of human and planetary well-being, moving away from the conventional focus on affluence and GDP growth; and (2) embrace the social–economic transformation essential for the long-term sustainability of the biosphere and society[5,16,21,22]. Transformation here means changing the fundamental attributes and institutions of human systems, including shifts in underlying values, worldviews and paradigms[6,23]. This movement cuts across economics, management, the broader social and sustainability sciences, policy, business, civil society and grass roots economic institutions such as credit unions, cooperatives and social enterprises. 'New' economics does not necessarily refer to ideas being recent, but to a desire to establish a new mainstream. Such a paradigm shift involves fundamental changes to basic principles, which, if present across diverse new economic approaches, could provide the foundation for a coherent new mainstream economic framework.

The movement for a transformative new economics will only shape new systemic regimes effectively if it has sufficient discursive power to define influential ideas and frames. This is needed to challenge vested interests that keep decision makers attached to dysfunctional political and economic policy regimes[24]. Gaining discursive power is also essential in overcoming epistemic lock-ins of economics as a discipline[25]. For example, editorial control of economic journals is dominated by a small number of western, mostly American institutions[26], disincentivizing diversity of thought.

The global polycrisis presents not only a pressing need for transformation but also opportunities for mainstreaming unconventional economic discourses. Social–ecological and social–economic systems undergo change in cycles[27]. Certain phases provide windows of opportunity for new paradigms, including 'release' and 'reorganizing' processes[28]. Systemic transformation typically originates with innovations in niches, including new narratives essential for transformation[29]. In time, these innovations can destabilize established practices and trigger regime transformation, resulting in qualitatively different regimes with new narratives and practices[29,30]. By exposing key problems of conventional thought, global disruptions can help new thinking to gain traction and innovations to scale up[31].

However, transformative new economic approaches remain diffuse, collectively lacking sufficient discursive coherence and definition to effectively challenge conventional thinking[22,32]. To address this, we identified principles (Table 1) that cut across approaches and can act as a boundary object to catalyse more cohesive discourse coalitions for economic transformation. We also investigated to what degree different principles were shared across approaches and which were emphasized most. To achieve this, we analysed document sources from science, policy and practice across 38 approaches (Box 1 and Fig. 1). Following discussion of the ten principles identified, we present a research agenda to support development of discourse coalitions[22] between disparate approaches for transforming economics in a time of polycrisis.

BOX 1

Analytical approach

Our approach inductively analysed the content of 102 documents deemed to express the scope of transformative new economic approaches by diverse experts from science and practice, linking qualitative content analysis and expert deliberation (Methods). Qualitative content analysis allows researchers to understand social phenomena and identify emerging patterns, themes and concepts in a subjective but systematic, scientific manner. Our interpretive approach did not define a pre-set number or organizational structure for the principles; these emerged from the data through iterative discussion and analysis. The narratives for the principles were subsequently elaborated based on 238 sources drawn from across transformative new economic approaches, including academic and policy-focused literature (Fig. 1). We also included several 'hybrid' approaches put forward in the expert survey, which adhered to some of the principles but did not take an explicitly transformative stance. The narratives associated with the principles are reported as a synthesis of predominant characterizations within sources, with divergent views noted where most salient. Every approach except one (Comanche economics) was characterized by at least three sources and by 8.2 sources on average. Fully referenced results are provided in the Supplementary Information.

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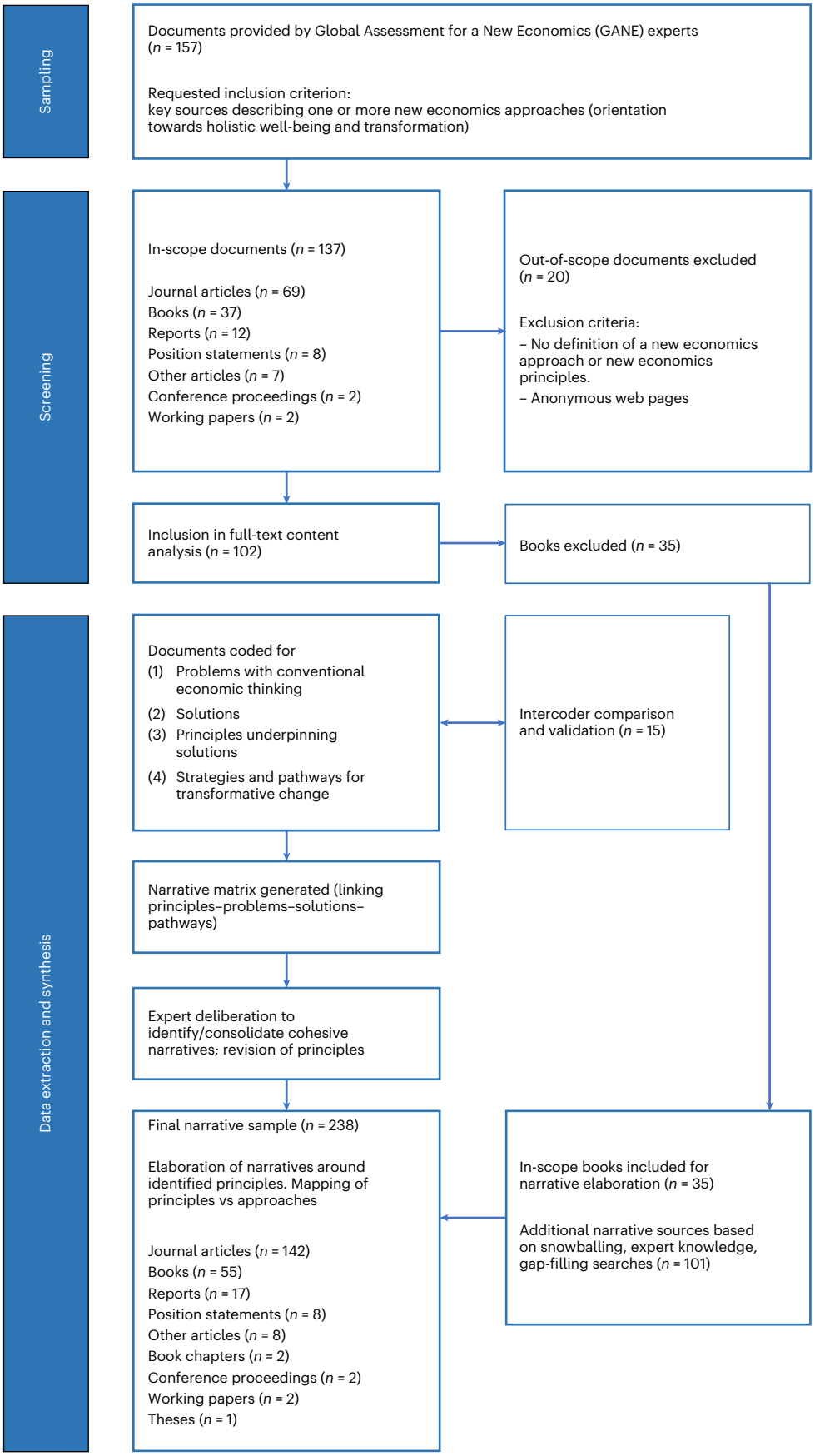

Fig. 1 | The review and analysis process. Schematic showing an overview of sampling, screening and data extraction and synthesis.

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Results

Our analysis identified 38 approaches (Table 2). Six approaches bridged conventional and new economics, embracing several principles but with less emphasis on transformation. We identified ten cross-cutting principles, categorized as holistic, ecological, social and political economy (Table 1).

Holistic principles

Two 'holistic' principles point out that economies are part of societies, which in turn are embedded in wider nature. Principle (1) calls on economists to 'recognize that economies are embedded within societies and ecosystems and that the basic purpose of economics is to support human and planetary well-being'. Many approaches focus directly on integrating long-term environmental, social and economic value, arguing that economics is fundamentally normative and all economic relations are social–ecological relations. Well-being is conceived as embedded in these relationships, with human and planetary well-being interdependent. An explicit goal is to align economic welfare with planetary well-being, recognizing critical constraints such as social capital (for example, caring and trust essential to healthy communities), Earth's life-supporting systems, cultural principles that regulate relations between people and nature, intergenerational equity and social–ecological resilience.

The second holistic principle, 'acknowledge complexity and the need for interdisciplinarity in addressing economic problems', points out the need for economists and policymakers to integrate diverse scientific, humanities and local and indigenous knowledge. Economies are complex, adaptive systems. Conventional neoclassical models reduce real-world complexity to an abstract set of production and consumption measures, which narrows possibilities and can drive problematic policy outcomes, for example, in addressing highly complex problems such as climate change. Many approaches thus advocate complexity-based, nonlinear, integrated social–ecological perspectives, acknowledging interdependencies and dynamics within and between natural and social systems, to underpin more holistic economic, social and environmental policies.

Ecological principles

Building on the holistic principles of embeddedness and complexity, many approaches are grounded in ecological understanding. Regardless of innovation, economic activity (products and services) always draws on natural resources. Principle (3) encourages economists and policy makers to 'acknowledge that economies have fundamental biophysical and biochemical limits to growth'. It recognizes that economies are inherently constrained by Earth systems. Bio- and circular economic approaches reframe the relationships between economies and earth systems as metabolic processes: the conversion of matter and energy and generation and recycling of material flows. Because metabolic processes are never completely efficient, growth has fundamental limits. Whereas circular economy perspectives mostly focus on decoupling growth and environmental impacts, steady-state, degrowth, post-growth and many ecological economists consider that decoupling alone is insufficient to address the climate and nature emergencies. They argue that ecological constraints require: world-views, models and policy frameworks at local, national and global scales that explicitly recognize, assess and integrate planetary boundaries and societal metabolism; limiting affluence, particularly in the global north; using holistic, well-being-based indicators to measure progress rather than GDP; and reducing inequality.

Principle (4) asks economists and policymakers to 'recognize that human-derived capital depends on nature'. Conventional economic thinking is primarily concerned with outputs, maintaining that when one form of capital input is diminished, another can replace it. This perspective is strongly challenged. For example, post-Keynesian economists reject direct substitutability of resources in aggregate production functions, whereas circular and ecological economists emphasize inherent connections between natural resource consumption and production through societal metabolic processes. This principle thus strongly advocates nature and resource conservation, including preservation of biodiversity and the climate system and diverse social innovations for environmental stewardship, such as multi-scale networking among businesses, neighbourhoods and cities to manage resources.

Principle (5), 'design economic systems to be circular and regenerative', reflects the design implications of ecological limits and embeddedness. Circular economy approaches focus on generating value by reducing material and energy use per unit of output and maximizing resource regeneration. Sharing economy thinking takes this further by looking to manufacturers, retailers and cooperatives to act as service providers by supplying the use rather than consumption of products. Doughnut economics adds social boundaries to the circular economy, shifting the emphasis to social–ecological regeneration. Flourishing economics emphasizes long-term socio–ecological benefits generated through collaborations between business and public policy within bioregions. Perspectives such as well-being and living economies highlight the importance of designing community-based living infrastructures that generate security, stability and productivity and decentralize decision making. Many approaches recognize the importance of resilient circular and local economies and supply chains, especially in terms of basic needs such as food and energy, to minimize waste, 'humanize' productive activities and improve resource security.

Social principles

Through its social principles, many approaches explicitly consider the relational and societal implications of economic practices. Principle (6), 'embed pluralistic models of values and behaviour, based on well-being, dignity, sufficiency and holistic freedom in all economic thinking, decisions and actions', spells out these social needs and implications. Institutions such as monetary systems, markets, valuation methods and economic education have 'meta-values' embedded in their design that determine what values are privileged in decisions. This principle thus recognizes the need to embed more relational and sustainability-aligned values in institutional models, for example, through inclusive community approaches to manage common pool resources and deliberative democratic approaches to social–economic valuation. This principle also invites retirement of the conventional view of *homo economicus* as a self-interested maximizing agent. Instead, it recognizes the socio–biological reality that humans are diversely motivated and that values and behaviour are grounded in social relationships. It resonates with concepts such as humanistic management and *homo integralis*, expressing people's wholeness and environmental embeddedness. Holistic freedom here balances 'negative' freedom from constraints, such as free enterprise, with 'positive' freedoms to be and do what is intrinsically valuable, such as being educated and participating in community life. This understanding encourages interventions focused on needs and capabilities, emphasizing dignity and sufficiency over unconstrained preference satisfaction.

Economics has traditionally focused on growth and efficiency as central goals. This is reflected in many economic and political institutions. Principle (7), 'consider equity, equality and justice as central questions of economic enquiry', explicitly challenges this emphasis and its association with 'trickle down' theory in economic policy, with global wealth inequality persistently increasing in recent decades[33,34], despite decreases in between-country income inequality[35]. Approaches such as well-being economics and economic democracy point out that not just poverty but also inequality undermines well-being, including for the better off. Equality, equity and justice are strongly emphasized by feminist and indigenous economists, advocating rights for social and cultural groups suppressed by conventional economic systems. Caring and feminist economics approaches challenge the gendered nature of economic relations, exposing assumptions concerning women's paid and unpaid labour in relation to social reproduction. Sen's capabilities

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Table 2 | Overview of new economics approaches and principles emphasized in the sources analysed

		Principles									
		Holistic		Ecological			Social		Political economy		
Type of approach	Approach	1	2	3	4	5	6	7	8	9	10
Schools of economics	Behavioural economics[a]		✓				✓				
	Complexity economics[a]		✓								
	Ecological economics	✓	✓	✓	✓	✓	✓	✓		✓	
	Feminist economics	✓					✓	✓	✓	✓	
	Institutional economics		✓					✓		✓	
	Post-Keynesian economics		✓	✓	✓	✓					
Economic perspectives	Agrowth			✓	✓		✓				
	Bioeconomy[a]			✓		✓					
	Caring economics	✓						✓	✓		
	Circular economy[a]				✓	✓					
	Cosmolocalism		✓			✓			✓	✓	✓
	Degrowth	✓		✓	✓	✓		✓	✓		✓
	Deliberative economics				✓		✓	✓	✓	✓	
	Doughnut economics	✓		✓	✓	✓	✓	✓			
	Ecological feminist economics	✓		✓	✓	✓	✓	✓	✓		✓
	Economic democracy			✓			✓	✓	✓		✓
	Fair markets	✓					✓				✓
	Flourishing economics	✓		✓	✓		✓				
	Foundational economy	✓			✓			✓	✓		
	Living economy	✓		✓				✓	✓		
	New municipalism	✓							✓	✓	
	New progressivism	✓					✓	✓	✓		
	Post-capitalism	✓					✓		✓	✓	✓
	Post-development						✓	✓	✓		✓
	Post-growth			✓	✓	✓	✓		✓		
	Responsible/natural capitalism[a]	✓					✓		✓		✓
	Sharing economy[a]			✓		✓	✓		✓		
	Solidarity economy							✓	✓	✓	
	Steady-state economics	✓		✓	✓	✓	✓	✓			
	Well-being economy	✓		✓	✓	✓	✓		✓		
	World system theory		✓						✓		
Broad societal perspectives	*Buen vivir*	✓			✓		✓	✓	✓	✓	✓
	Christian humanistic and relational perspectives	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Comanche philosophy[b]	✓			✓				✓	✓	
	Enlivenment	✓		✓		✓	✓		✓		
	Kaitiakitanga	✓		✓			✓			✓	✓
	Sumak kawsay	✓			✓		✓		✓		✓
	Ubuntu	✓					✓	✓	✓	✓	✓

[a]Denotes 'hybrid' approaches that bridge conventional and new economics. Principles: (1) social–ecological embeddedness and holistic well-being; (2) interdisciplinarity and complexity thinking; (3) limits to growth; (4) limited substitutability of natural capital; (5) regenerative design; (6) holistic perspectives of people and values; (7) equity, equality and justice; (8) relationality and social enfranchisement; (9) participation, deliberation and cooperation; (10) post-capitalism and decolonization. A referenced version of this table is provided in the Supplementary Information. [b]Only a single appropriate source was identified for Comanche philosophy.

framework and its extensions constitute an important conceptual lens, redefining progress and development to better integrate social justice. Concepts of environmental justice link environmental impacts and social–economic equality. With growth constrained by Earth systems (Principle (3)), fair distribution is an urgent environmental matter. Ecological economists thus propose a new hierarchy of concerns, where sustainable scale, equitable distribution and social–ecological resilience precede efficiency.

Political economy principles

The fourth set of principles expresses ways to reshape the political economy to support inclusion and participation. Principle (8), 'embrace

pluralistic social and relational approaches that support social enfranchisement, social needs and the common good', encourages more central integration of relational worldviews and values such as care, community, love and reciprocity into economic thinking and policy. Proponents generally see important roles for the state and civil society in securing economic and socio–relational priorities and universal access to basic services. Approaches such as foundational, caring and diverse indigenous economics advocate repurposing businesses and financial systems to ensure long-run social and ecological value, overcoming narrow emphases on short-term surplus generation and adapting more relational models of corporate leadership and new structures of accountability towards stakeholders. This also requires more holistic and integrated evaluation and reporting, including metrics that recognize the profound value of unpaid care work and environmental benefits and damages.

Conventionally, economics has emphasized modelling and analytical, data-driven methods. Several approaches expand their scope to recognize complex systems and incorporate coupled ecological economic models. Principle (9), 'embed participation, deliberation and cooperation as core to economic thinking and policy', advocates integrating analytical approaches with more inclusive social processes in research and policy. It is not possible to fully separate analytical from normative research when considering complex systems. Any choice of technical parameters is ultimately value based, and conflicts between values cannot be fully resolved through optimization but must be democratically deliberated through methodologies such as participatory action research, participatory systems modelling and deliberative valuation. In relation to policy, deliberative economic approaches envisage an active role for citizens participating and cooperating to improve their quality of life and advocate for the rights of workers and others affected by economic policies to have genuine opportunities to participate in decisions. New municipalism and cosmolocalism focus on institutionalizing participative platforms and practices involving collaborations among citizens, municipalities and other levels of governance and through effective cooperative institutions serving local economic development needs. While cooperative perspectives have received some scepticism in conventional economics, institutional and feminist economists have pointed them out as common practice, benefiting sustainability, productivity and equality.

Finally, Principle (10), 'take post-capitalist, decolonized economic perspectives', underpins diverse models and applications that disrupt conventional relationships between capital and labour, with particular regard for the views of marginalized and previously colonized peoples. Concepts of production conventionally build on labour-capital dichotomies and the concentration of power and capital, reflected in the post-colonial export of western mass consumption lifestyles to the global south. Decolonization and post-capitalism are thus linked in their analyses of 'unmaking' colonial and capitalist institutional configurations. Rather than providing a single ideological post-capitalist blueprint, diverse approaches, applications and perspectives on markets and monetary and financial systems are advocated. At the microeconomic scale, sharing economy and post-capitalist approaches envisage economic practices based on new technologies and a reduced need for labour, including new currencies that embed social and ecological values, communal ownership, new forms of cooperatives and online networking spaces to promote non-profit forms of work and address labour mobility, empower disadvantaged individuals and support capabilities. Cosmolocalism envisages collaborations between globally connected citizens and grassroots movements to transform consumption–production regimes through digital innovation, strengthening both local, social–ecologically embedded economies and global citizenship and multilateralism. At the macroscale, degrowth, post-growth, ecological, steady-state and post-Keynesian economics provide new analytical tools in areas such as monetary and physical input–output and system dynamics modelling, whereas post-development theory affirms cultural diversity, aligns new economics with indigenous philosophies, promotes democracy and provides social spaces for conflict resolution and social protocols associated with reciprocity and respect for nature.

In summary, these ten principles explicitly shift attention in economic thinking and policy towards holism, heterodoxy, plurality, interdisciplinarity, equity, well-being, participation and aligning economic activities with natural systems. They recognize the context specificity of institutions, values and culture and the need for relational and complexity-based thinking to achieve inclusive and just transformation towards sustainability.

Approaches and principles

In the sources assessed, the most emphasized principles included relationality and social enfranchisement ($n = 25$ approaches), holistic perspectives of people and values ($n = 24$) and holistic well-being and social–ecological embeddedness ($n = 23$) (Table 1). Transformative approaches expressed three to ten principles each, and hybrid approaches two to four (Table 2). Christian relational perspectives ($n = 10$), ecological and ecological feminist economics and degrowth (each $n = 8$) were characterized by most principles. Along with *sumak kawsay*, *buen vivir* and foundational and well-being economy, those approaches were also associated with at least one principle in each of the holistic, ecological, social and political economy grouping categories.

We identified four groups of approaches in terms of the principles they emphasized. A group cluster of mainly economic perspectives (economic democracy, deliberative economics, new municipalism, new progressivism, post-development, world system theory) emphasize social and political principles, focusing on questions of democracy, participation, cooperation, deliberation and decolonization.

A second, larger cluster also mostly consists of economic perspectives (flourishing economics, well-being economy, doughnut economics, degrowth, agrowth, ecological economics, circular economy, steady-state economics, cosmolocalism and post-growth). These approaches have a strong focus on ecological limits and the scale of the economy and often also frame social and political economy questions within the context of earth systems. *Buen vivir*, enlivenment and Christian humanistic and relational perspectives overlap with this cluster while also linking to the next.

A third cluster consists of a wide range of economic and broader societal perspectives (institutional, caring and feminist economics, responsible capitalism, solidarity, foundational and sharing economy, *buen vivir*, *sumak kawsay*, *ubuntu*, *kaitiakitanga*, enlivenment, Christian humanistic and relational perspectives) that emphasize social and political economic issues such as power, justice and equity and often link these with relationality, quality of life and human dignity.

The final, smallest cluster consists of schools of economics and economic perspectives (fair markets and behavioural, complexity, post-Keynesianism and post-capitalist economics) that critically develop mainstream economic knowledge and themes, elaborating on issues such as growth and development, business values, fairness in markets and economies, wealth and distribution and behaviour.

Discussion

Our synthesis links a large number of transformative new economic approaches across science and practice and systematically distils commonalities (and divergence) in their fundamental principles. No single principle was emphasized by all approaches. Only a minority of approaches cut across all categories of principles. This indicates the salience of the principles for building discourse coalitions where different approaches complement each other.

Within the holistic, social and political economy categories, there was at least one principle that was emphasized by a substantial majority of approaches. However, even the most expressed ecological principle, limits to growth, was emphasized by only 45% of the

approaches represented in our sample. This does not mean that other approaches ignore sustainability transformation altogether but that the sources for these approaches did not develop a cohesive environmental discourse with clear principles. This is surprising because of the widespread attention to the climate and biodiversity crises and associated risks and the way that these crises point to the need for economic transformation[5,6,10,12]. Thus, there continue to be important opportunities for diffusion of transformative ecological perspectives into socially oriented approaches. This can lead to mutual enrichment, as demonstrated by, for example, integrations between feminist and ecological economics[36].

Different approaches also have different epistemic and ontological assumptions, which can generate tensions but also raise opportunities for mutual learning. For example, productive dialogues may be had between indigenous broad societal perspectives and western economic schools and perspectives around understanding complexity[37] and decolonization[21]—or around relationality, which is considered by, for example, behavioural, feminist and deliberative economics, and Christian humanistic and indigenous perspectives but through different concepts, worldviews and knowledge systems[38–42].

There is also broader opportunity for diffusion of transformative perspectives into hybrid approaches that bridge neoclassical and new economics. For example, the cluster of approaches focusing on critically elaborating mainstream themes form a spectrum from more (for example, post-Keynesian) to less transformative orientations (for example, complexity economics), providing opportunity for debate around the need for transformation. Such debates are important to address the risk of perpetuating fundamental problems and power structures if mainstream economics takes on more sophisticated assumptions and broadens its scope of analysis, without broadening its imagination of what kind of economic systems are possible[32]. This is also why a paradigmatic shift is needed across the ten principles. Discourse coalitions geared towards mainstreaming their breadth can ensure that current movements towards integration of individual elements (for example, circularity) become a springboard towards broader transformation, rather than a way to evolve neoclassical economics without fundamentally challenging vested interests.

Building discourse coalitions is particularly important in a time of polycrisis, not just because of the urgent need for transformation, but also because global economic systems' consistent failure to respond equitably to crises provides opportunities for change that speak to the principles. For example, many failures recognized by new economists during the COVID-19 pandemic are now acknowledged in public enquiries, such as how neoliberal thinking undermined supply chain resilience[43], resisted public health interventions[44] and caused pre-existing vulnerabilities resulting from diverse inequalities, which strongly influenced disease and death rates[45]. The pandemic also heightened recognition of the importance of key workers, the foundational economy, cooperative economic practices and our interdependencies with nature[46,47]. Furthermore, the large-scale social and economic interventions by governments, rapid changes in behaviour by citizens and adaptations by firms set a precedent for rapid transformative change in response to other crises[45]. However, crises also generate new barriers. For example, dynamics around inequalities exposed by crises such as the pandemic go two ways, where increased recognition provides a leverage point for change, yet further concentration of wealth further entrenches vested interests[48]. Overcoming such interests requires discursive power through discourse coalitions, but also disrupting material power relations and reclaiming power through new economic institutions (principles (9)–(10)).

Another avenue for mainstreaming the ten principles is their ability to link questions of resource allocation to globally agreed values and norms. These include the UN Declarations of Human Rights and Rights of the Child, the Convention on Biological Diversity's Ecosystem Approach and the way these are expressed in frameworks such as the Sustainable Development Goals, the Paris Agreement and Kunming–Montreal Global Biodiversity Framework. Normative approaches challenge the conventional economic fact-value dichotomy that reduces social questions to technical problems[49]. This artificial divide allows policymakers to routinely abuse economic arguments to justify unethical and unsustainable policy. For example, bolstering growth was used to justify pandemic recovery policies weakening social and environmental regulations and strengthening environmentally destructive industries[45,48]. Crises such as the pandemic and invasion of Ukraine also expose predictable[50] policy failures resulting from dogmatic focus on efficiency and growth, such as faltering supply chains and western reliance on authoritarian regimes for fossil fuels. These failures underline the need for transformative new economic approaches that integrate rather than externalize human rights and needs, resilience and environmental limits[51]. Another example is humanity's inability to effectively address climate change. Besides the barriers posed by vested interests, this is to an extent driven by simplistic economic modelling approaches that insufficiently acknowledge complexity and the need for interdisciplinarity. A range of more holistic tools integrating new economic principles are available for assessing viable transition paths but are not yet commonly applied in policy analysis or Intergovernmental Panel on Climate Change (IPCC) reports[52–54].

Starting with the 2008 global financial crisis, recent backlashes against globalization may herald the end of neoliberal dominance[55]. However, it is unclear what structures may replace it—they could be defined by protectionism, nationalism and authoritarianism[56] or by new economic initiatives pairing global collaboration with decentralization through regional circular economies and empowered local communities[2,45]. There are increasing examples where such thinking is becoming more prominent, from community-embedded economic responses during the pandemic to broad well-being indicators for measuring macroeconomic progress, to formal government adoption of doughnut (for example, Amsterdam) and well-being economics (for example, Scotland, New Zealand, Iceland, Wales and Finland). Yet, in academia, whereas some principles are gaining traction through hybrid approaches such as circular and behavioural economics, research on transformative new approaches is still largely absent from top-ranking economic journals, with more prominence in interdisciplinary journals and disciplines such as geography[57]. Most economics textbooks also continue to present a homogeneous, largely conventional body of knowledge[58].

The ten principles tie together a range of interdisciplinary, integrative concepts (for example, planetary boundaries, societal metabolism, regeneration, value pluralism, social–ecological embeddedness) that reflects the complexity of human behaviour, societal interactions and human–nature relationships. Such 'integration by concepts' is key to a more comprehensive understanding of issues and can underpin more effective and just solutions to global crises[59,60]. By providing a cohesive narrative grounded in such concepts across new economic approaches, the ten principles can strengthen discursive power through discourse coalitions while respecting ideological pluralism and differences in emphasis, focus, strategy and framing, for example, in relation to capitalism or economic growth[32]. Global south approaches in particular advocate ontological and epistemological pluralism, challenging the monism of conventional development and aspiring for a pluriverse or 'world of many worlds'[61]. Whereas our results demonstrate diffuse adoption of different principles across approaches, competing post-globalization nationalist conservative discourse is also highly diffuse, with potentially more problematic internal contradictions[56].

However, despite the prominence of global south approaches such as *buen vivir* and the solidarity economy, transformative new economics research remains heavily concentrated in the global north, risking a bias towards certain issues and frames. For example, the increasing prominence of degrowth frames may resonate less in the global south[62], and specific gender-inequality issues in the global south arising in

global crises such as the COVID-19 pandemic (for example, women's livelihood loss, food insecurity, educational setbacks for girls) risk being overshadowed by global north issues (for example, domestic care responsibilities)[63]. Recognition of non-western worldviews and knowledge systems is a generic scientific challenge[64], and new economics is no exception. More research is thus needed to validate and develop new economics principles and narratives more explicitly within global south contexts.

Future research could also consider applications of the principles in policy, business and civil society: what can be learned from current applications and institutionalizations and what are the outcomes in terms of equity, sustainability and perceived legitimacy? There are opportunities for further synthesis research in many areas, such as developing more integrated, pluralistic and relational models of value and human behaviour (building particularly on principles (6), (8) and (9)), and cohesive views beyond capitalism and socialism of the relations between capital, labour, markets, the state and communities that connect diverse thinking and practice (principles (1), (5), (8) and (10)). Whereas our review focused on principles, there is also a need for reviewing transformative new economic pathways that address diverse crises and methodologies across approaches, including economic instruments for policy, different analytical methods and boundary methods at the interface of research and policy such as citizen assemblies. Again, the divergent expertise of different new and hybrid economics approaches can strengthen each other, for example, from behavioural economic experimental approaches to post-Keynesian macroeconomic modelling, and recursive methods in complexity economics to deliberative valuation and participatory appraisal in ecological and feminist economics.

Finally, more research is needed on understanding barriers and opportunities for mainstreaming the principles in a polycrisis world, which continues to be volatile and uncertain. Future research could consider strategies for overcoming vested interests, breaking through discursive lock-ins, understanding contexts in which transformative new economics approaches are being implemented and connecting niche initiatives into networks that amplify their transformative potential. The importance of such work cannot be overstated, because unless the ideas summarized in the ten principles are rapidly embedded in global and national institutions, humanity is unlikely to overcome the extreme crises it is facing.

Methods

We conducted an inductive, qualitative content analysis[65] to understand the scope of new economic approaches by identifying core principles and systematically synthesizing them across a large number of economic approaches. Figure 1 provides an overview of the sampling, screening and analysis process.

The initial set of sources was provided by members of the Leadership Team and Advisory Board for the Global Assessment for a New Economics (GANE) project (http://neweconomics.net). Advisory Board members were affiliated with diverse well-established organizations that embraced or promoted new economics in science, business and policy, such as the Club of Rome, Wellbeing Economy Alliance, World Future Council, World Resources Institute, the Capital Institute, Catalyst 2030, Better Nature, Ethical Markets, the Gross National Happiness Centre and the Green Economy Coalition. Eleven of 24 board members were based in the global south, whereas 17 of 24 members were affiliated with organizations with a global remit. Because of this diversity of backgrounds, we could draw on a mix of sources across research and practice.

Board members were (as part of a broader survey on new economics and transformation within a COVID-19 pandemic context) requested to name one or more new economics approaches within their expertise and provide up to five key sources each, describing one or more new economics approaches. GANE leadership team members added further sources for underrepresented approaches. The experts were asked to consider new economics as being broadly associated with a transformative orientation, moving away from an emphasis on GDP growth towards advancing well-being through meeting basic needs, restoring ecosystems and increasing equality. These inclusion criteria drew on three publications that previously reviewed a substantial number of named new economics approaches[21,22,66] and Ripple et al.[5], an article signed by over 13,000 sustainability scientists that provided a starting point for identifying changes in economics needed for sustainability transformation.

One hundred fifty-seven sources were put forward, including journal articles (49%), books (24%), reports (8%), other articles (7%), position statements (6%), web pages (3%), conference proceedings (1%), working papers (1%) and one video (1%). The sources were only included if they clearly described one or more new economics approaches and/or principles. Web pages without a personal or institutional author were also excluded. This left 137 sources (Fig. 1). For practical reasons, 35 of 37 in-scope books were not initially included for detailed analysis but were drawn on for later elaboration of the principles; two books were included because of the limited number of other sources associated with their approach. This left 102 documents that were used for detailed analysis of the new economics approaches and principles.

The sources were first screened to extract labels for new economic approaches. The analysis included all distinct named new economics approaches in the main text of these sources, apart from those that were a specific 'sub-approach' or concept that could be adopted by multiple new economics approaches (for example, 'food sovereignty') or a broad umbrella term or higher-level approach that could embrace multiple new economics approaches (for example, transmodernism).

The analysis then followed a hybrid of conventional and directed qualitative content analysis[65]. The sources were initially inductively analysed across four predefined themes: (1) problems with conventional economic thinking; (2) solutions to address problems; (3) basic principles underpinning solutions; (4) strategies and pathways for change. Verbatim quotes and page numbers were recorded to a spreadsheet. A random pilot sample of 15 sources was coded, with the coding discussed and validated through discussion between five members of the research team before the full dataset was coded.

Following initial coding to the four themes, the codes were iteratively consolidated through deliberation among the author team. Here we aimed for comprehensiveness and treated content equally regardless of the number of sources that advocated them to avoid biasing towards more strongly represented approaches. The consolidated codes were then organized together across the four themes in a narrative matrix around the consolidated basic principles, that is, linking principles with problems, solutions and change pathways.

Through further deliberation, we then refined the matrix into consolidated narratives surrounding the high-level principles and ordered the principles to form a cohesive overall narrative. There was no pre-set intention to identify a certain number of high-level principles, but we sought to balance between having too many, overly specific principles and having a small number of too wide-ranging principles. The resulting principles were also qualitatively mapped according to broad categories that were emergent from the data (ecological, social, political economy or holistic).

To further elaborate and exemplify the narratives for each principle, we reincluded the in-scope book sample and added a further 101 sources through snowballing, expert knowledge and targeted searches to further supplement sources for poorly represented approaches and ensure that each approach was represented by at least three sources. The only exception was Comanche philosophy, for which a single source was submitted in the survey[39] and no further relevant sources could be identified. Inclusion of the additional sources generated a final sample (n = 238), including journal articles (60%), books (23%), reports (7%), position statements (3%) and other sources (6%) (Fig. 1). Each approach was then cross checked against the coded principles

data to map approaches against principles. In doing so, we interpreted whether the principle was emphasized by one or more of the sources, that is, clearly identifiable as a distinct discursive theme, based on agreement by two of the researchers. This mapping was then validated and updated using the expanded, final sample. Through this process, the approaches were also grouped into emergent categories: (1) schools of economics that reflect particular theoretical and analytical paradigms; (2) economic perspectives that take broader views of how economies should be structured and tend to be less academic and more policy focused than schools; and (3) broad economic philosophies that represent broader philosophical approaches with explicit elements of economic thinking.

Characterizing principles and narratives through inductive analysis is inevitably interpretive. Other researchers might have structured the narrative in a different number of principles, labelled and organized them differently and interpreted the relative emphasis of different approaches on particular principles somewhat differently. Surveying different experts would have also led to a different basis for interpretation, and expert selection bias inevitably influenced the relative representation of different approaches and sources selected. We partially mitigated this through increasing the representation of poorly represented approaches as discussed above. Relative representation will also have been influenced by the nature of the approaches: whereas some approaches have built up a vast literature over multiple decades (for example, ecological economics) or have more recently become well known and prolific (for example, degrowth), other approaches originate in a single author (for example, doughnut economics, enlivenment). Rather than addressing such issues through adding arbitrary weights, our focus was on developing discursive synthesis. Consequently, we represented elements of discourse independent of how frequently they were represented.

Another important limitation of the expert survey-based approach is that there may be relevant approaches that were not named but may be considered as new economics by other experts. For example, new economic principles can be identified in religious and spiritual traditions besides Christian humanism. Marxist economics was also not put forward, although it has influenced a range of approaches that were included (for example, *buen vivir*, solidarity economy, new Progressivism, economic democracy). Less prominent approaches may have been unknown to the surveyed experts, considered as sub-approaches or out of scope as economic approaches. However, given satiation in the data and the large number of approaches analysed, it is unlikely that additional approaches would have generated major changes to the principles.

Reporting summary

Further information on research design is available in the Nature Portfolio Reporting Summary linked to this article.

Data availability

The dataset generated by the survey research is available via figshare at https://doi.org/10.6084/m9.figshare.28615724 (ref. 67).

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Study description	Survey with experts from the Global Assessment for a New Economics project (GANE)
Research sample	The initial set of sources was provided by members of the Leadership Team and Advisory Board for the Global Assessment for a New Economics (GANE) project (http://neweconomics.net).
Sampling strategy	Documents were selected to represent the diversity of new economics approaches according to the expertise of the Leadership Team and Advisory Board members of the Global Assessment for a New Economics project, until no additional new economics labels conforming to our pre-defined scope of new economics (see Methods) emerged.
Data collection	See methods section for details.
Timing	The survey took plance in June 2019. Additional sources were included up to June 2024.
Data exclusions	See methods section for details.
Non-participation	N/A
Randomization	N/A

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Methods

n/a	Involved in the study
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