

H O P E

F O R T H E W O R L D

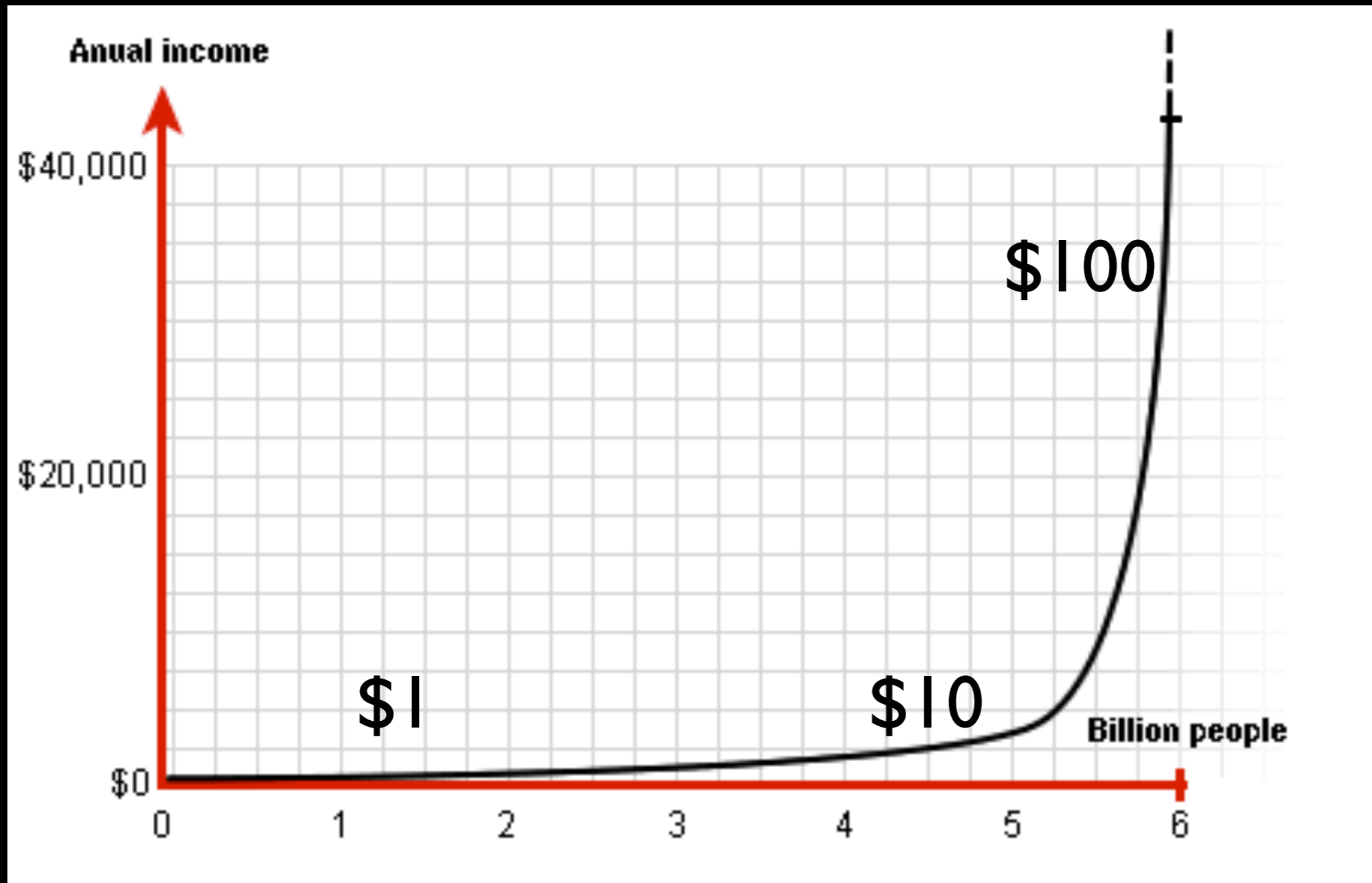
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- Technological solutions exist for all of the world's major problems
- The internet and telephone networks will reach almost 100% of the human race by 2020
- The time to get serious about solutions is now

I.

**Understanding
Poverty and
Disasters**

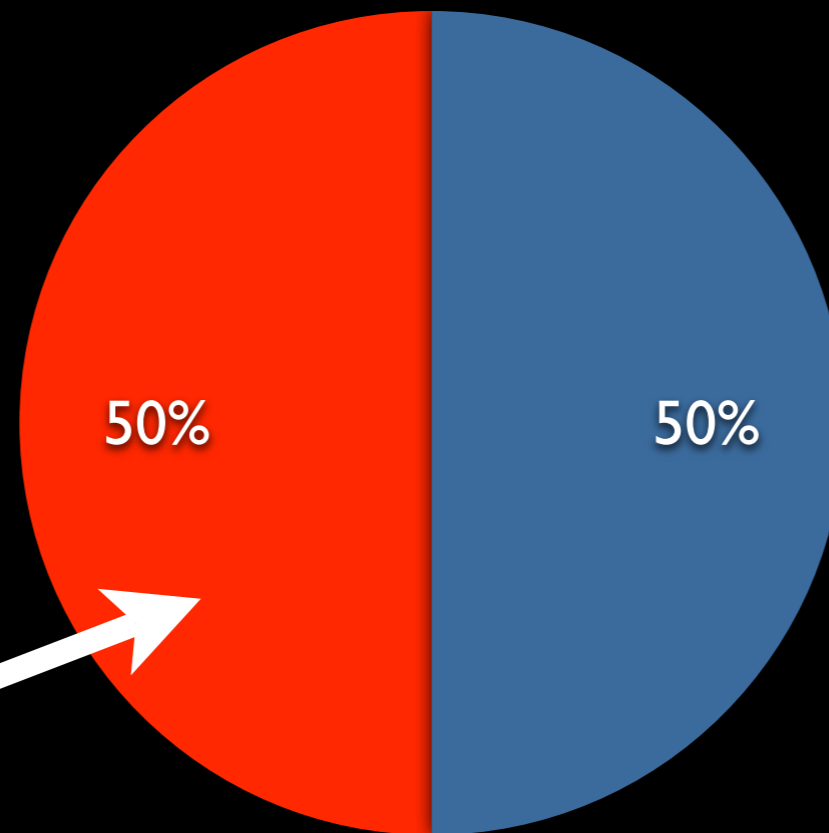
Most People Are Poor



Really, Really Poor

Half Of All Death Is Death From Poverty

- Non-poverty deaths
- Poverty deaths

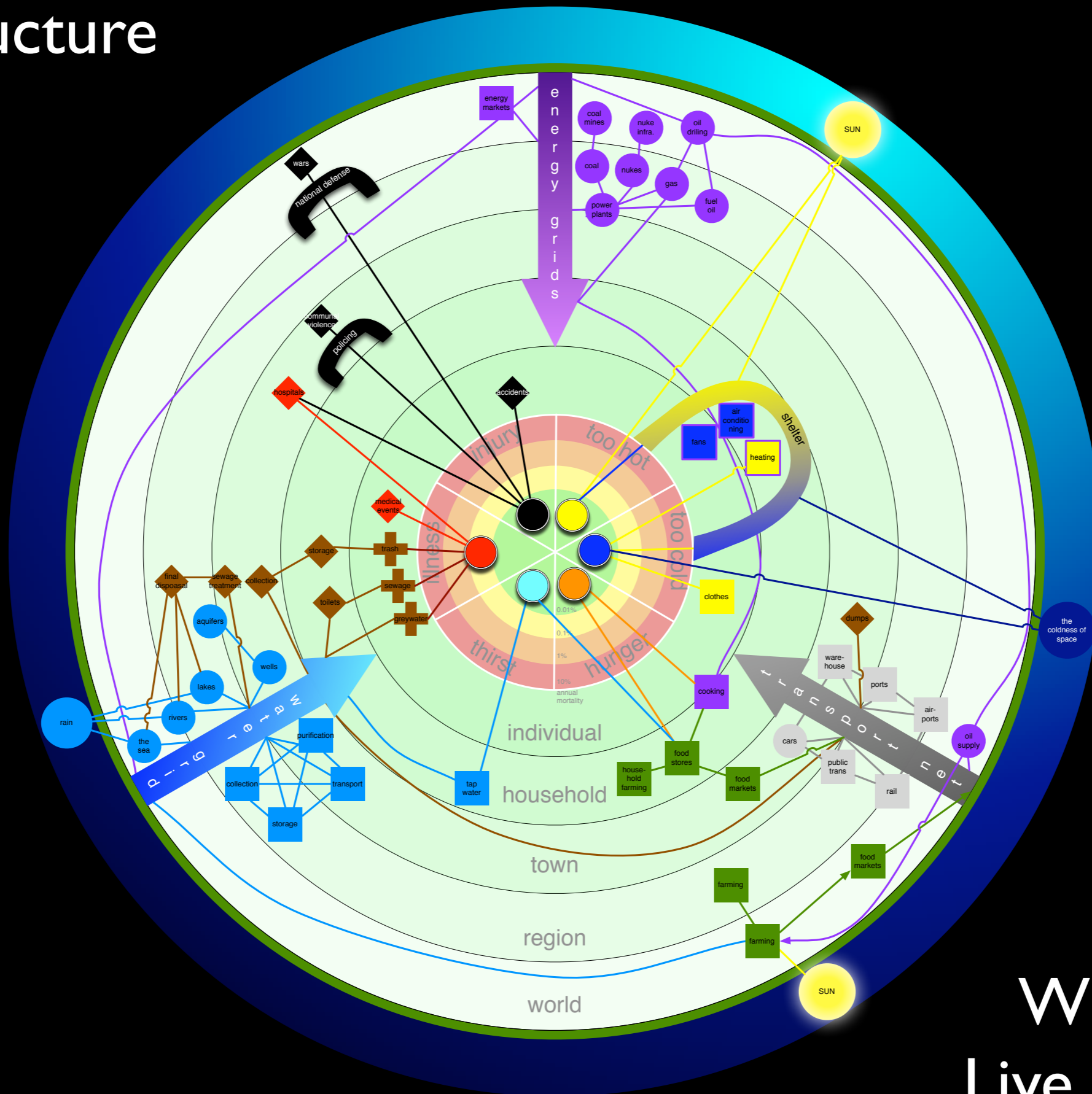


30 million
people a year

How Do People Die?

- Hunger - maybe 3m a year
- Water-borne disease - maybe 5m a year
- Smokey cooking fires - maybe 2m a year
- Various other contributory factors - the “poverty cluster” - account for the rest
- Lousy medical care, overwork, poor nutrition, no vacations, constant stress

Infrastructure

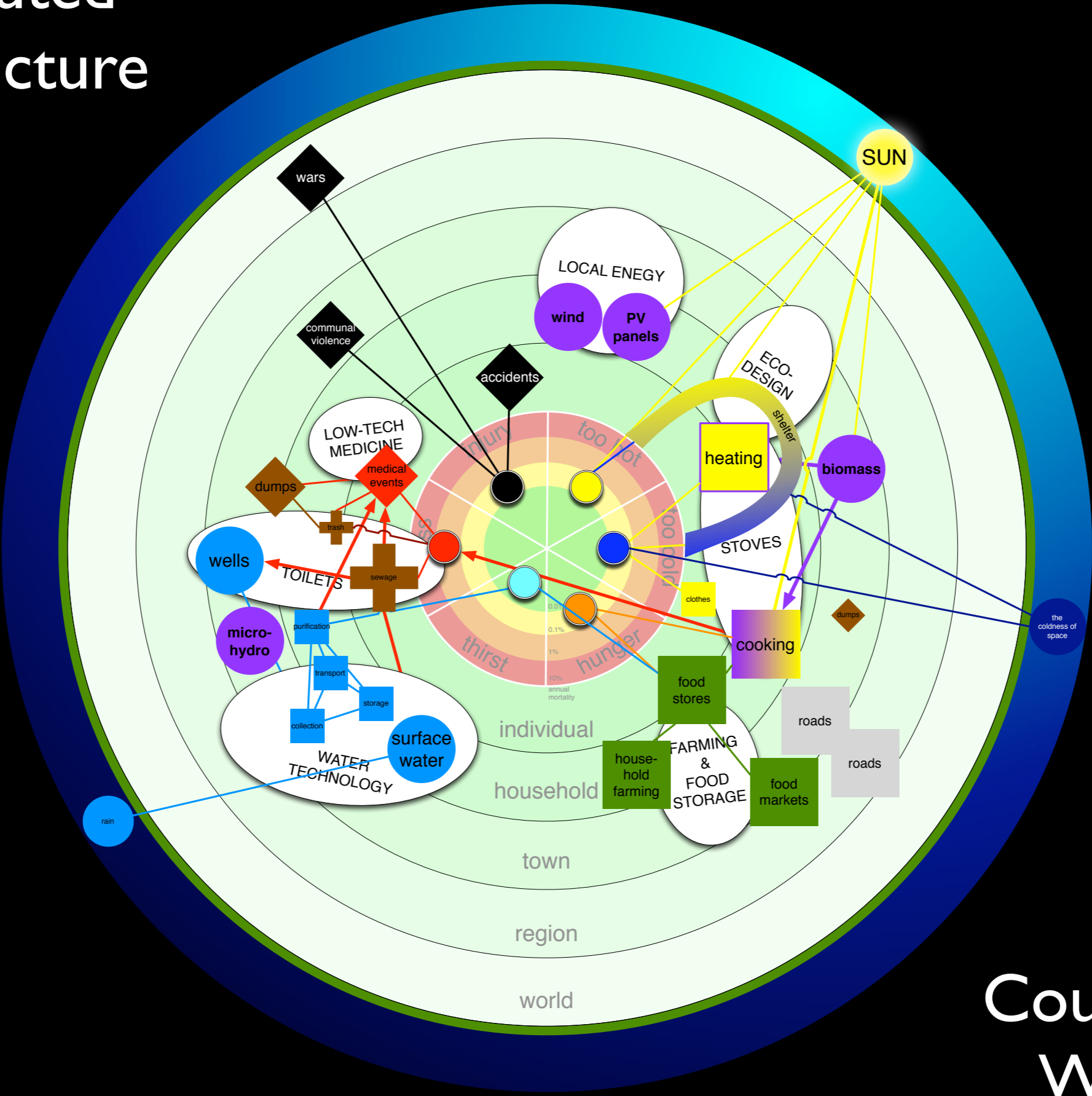


Why We
Live So Long

Alternative Models

- Kerala Model - 76 year life expectancy on \$1 per day average income. 99.9% literacy, effectively European demographics.
- How? Nobody knows. “Democratically elected market communism”
- Distributed infrastructure / sustainable development models
- **Separating health and well-being from income**

Distributed Infrastructure



Could This Work?

What is a Disaster?

- **1. Something Bad Happens**
 - Some People Die Immediately
 - Infrastructure Breaks Down
- **2. Survivors Rebuild**
 - The Rich Self-Rescue (or Govt. Helps)
 - **The Poor Often Die First**

Pre-existing poverty
and systems fragility are
why so many poor
people die in disasters.

- The Rich Pay to Solve Problems
 - Netherlands Builds Dykes
 - Bangladesh Just Floods
- The Rich Can Pay For Help - And Do

Systems Interventions

- Underlying Poverty is Why Populations Are So Vulnerable
- Transitional Solutions Have To Address Underlying Poverty to Work
- The Goal:
 - ***To Restore Economic Self-Sufficiency***
- Loss of housing is urgent, loss of capital and income is important. Both must be covered.

2.

**What Assets Do
We Have To Help
With?**

A Disaster Happens

- People are Injured
- Disease May Be Common
- People's Homes Are Damaged Or Gone
- People Are Relocated
- People's Work Is Gone
- Basic Infrastructure Is Damaged
- What Do We Have to Offer?

Current Model

- Rooted in WW2 Europe and Earlier Events
- Raise Money From The Public As Fast As Possible
- Deal With Immediate Medical Issues If Poss.
- Put Tents / Temp Shelters On The Ground
- Help Rebuild Facilities and Infrastructure
- Move Towards Transitional Housing (if ness)

Innovation?

- This Is Not The End Of Learning About Aid!
 - Mobile Phone Networks May Prove Transformative
 - Different Approaches to Accountability and Finance
 - Different Kinds of Infrastructure (solar, wind, local water purification, stoves)
- Bureaucracy is Very Problematic - But Changing - Knowledge Sharing, Experiment

Ask The Big Questions: What Can High Tech Rich Areas Do To Help?

- **The Big Six Assets**

- Money

- Knowledge

- Political and Military Power

- Mobile Expert Teams

- Advanced Heavy Logistics

- Undamaged Physical Infrastructure

We're Designers

- That Makes Us Part of the “Knowledge” Asset
 - Our Job Is To Question Assumptions
 - Consider New Strategies
 - Discover Previously-Hidden Answers
- Start With A Clean Mental Slate
 - What is Possible?

The Hexayurt Approach

- Conventional Approach: Use Planes to Carry Tents to the Disaster Area
- Hexayurt Approach: Use Trucks to Carry Plywood, Cardboard etc. To the Area
- Use Local Construction Skills / Imported Building Workers to Make Shelters
- Leverages: Undamaged Physical Infrastructure, Logistics, Knowledge
- What Else is Possible?

Key Areas for Innovation

- Rapid Response / Transitional Housing Divide
- Infrastructure - Water, Sanitation, Cooking, Power (for Phones)
- ICT - Mapping, Self-Organization, Situational Awareness, Communications, Self-Support, Contact with Relatives, Friends Abroad etc.
- Empowered People - Resources, Education
- Quickly Restoring Economic Self-Sufficiency!

Think Carefully!

- Spend per Disaster Victim is \$20 to \$100
- Tent Logistics: \$100 Air Freight per Tent
- NGOs are **Very** Slow to Adopt New Ideas
- How Can People Help Themselves Best?
- Work on Poverty, Not Disaster Alone
- A Lot Has Changed Recently - What Now?

3.

**Design For
Scalability**

How Big is the Problem?

- Refugees (Strictest UN Defn.) about 9m
- Looser Definitions: maybe 30-60 million
- Typical Stay is *Decades* in Camps
- 6 to 40 Million Disaster Relief Tents Used Annually (Eelko Brouwer, NRC Estimate)
- Maybe 100m Homeless Globally
- 1 Billion+ Very Poor People
- Continuum of Shelter Solutions

Scalability Factors

- MONEY MONEY MONEY
 - A Million Shelters X \$1 on Cost is \$1m
- Logistics: NGOs Want it Small and Light
- Materials Supply Chain: 100K Units Min
- Spike Production: Can We Have 100K Units... by Thursday?
- IP: No Patents, NGOs Won't Buy Patented
- Eco-Factors - Secondary, But Real

Beyond Shelter

- 100K People in a Field.. Now Cholera
- Agricultural Self-Sufficiency - or Feed These People Forever
- Disaster Relief - and Restoring Local Trades and Skills to Productivity
- Technical Solutions to Social Problems - Unify Owner, Guard and User of Power Systems (Like Solar and Wind) so They Do Not Get Stolen / Broken / Abandoned

Two Critical Insights: #1

- *Converting Materials Already in the Global Supply Chain into Survival Materiel Quickly and Efficiently is the Key*
- Saves Stockpile Costs, Gives Scalability
- Hexayurts, Of Course, Started This Way
- SODIS Water Purification
- Some Kinds of Toilets (Sulabh)
- What Else Can Be Done This Way?

Two Critical Insights: #2

- There is No Fundamental Difference Between Disaster Relief and Development Aid if Disaster Relief is Understood Fully
- Horrible Political Problems Around This, Although it is Obviously True
- Rich People Require Only Minimal Relief
- Poor People Have Tons of Other Problems
- Poverty Reduces Resilience Which Produces Victims - Fix the Whole System

Disaster Relief is the Easiest Problem

- Relatively Abundant Funds
- Small Populations
- Global Support from World Public Opinion
- Problems: Logistical, Political
- Compare Poverty: 10 to 100x More Affected, Largely Invisible
- Major Progress Here Will Have Secondary Effects in Poverty Alleviation

Change is Possible

Change is Inevitable

- South-South Cooperation
- ICT Including Cheap Global Cellphone Access, GPS, Satcom, Satmaps etc.
- Consistently Improving Inter-Agency Cooperation
- Higher Standards Expected from the International Community

The Long Road

- Estimate 10 Years from Concept to Field Testing
- Estimate 10 Years from Successful Field Test to Mass Adoption - If We Are Lucky
- The Good News - The World Moves Faster and Faster
- We Can All Help This Happen

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