



Hawai'i 2050 Sustainability Task Force

Issue Book Summary



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Introduction

The Hawai'i 2050 Task Force asked 19 scholars from the University of Hawai'i to prepare papers on a dozen critical issues facing Hawai'i as it moves toward a more sustainable future. Together with the input gathered from the community, the 2050 Sustainable Hawai'i Issue Book will provide the Task Force with essential information to be used in developing the plan. We are sharing some of the history, current status, facts, data and perspectives from the Issue Book with you to provide food for thought as you offer your input in your small groups.

While the critical issue areas are treated in the Issue Book as separate chapters, the Task Force recognizes that they are in fact connected and interdependent; and that much of the work of planning will be to understand how change in one area affects all other areas.

This handout contains the information in this presentation. The Issue Book is available online at www.hawaii2050.org. We won't be taking time for discussion of this presentation. However, you can go to the website, read the Issuebook, and submit comments and questions.

Aloha 'Āina

For Native Hawaiians, the land has life and people live in close relationship with the land and its resources. Hawaiian stewardship of the land is guided by five principles:

- Ahupua'a - sustainable management of the land and resources in areas that flow from the mountain to the ocean
- Natural elements are interconnected and interdependent
- Wai or freshwater is the most important for life
- Ancestral knowledge of the land is deep and must be passed on to future generations
- Aloha 'āina, malama 'āina, and lōkahi - respect and care for the land; maintaining balance with nature; and following practices that sustain the land and its resources

For the future:

- Will we adopt these principles of stewardship of the 'āina against competing forces occurring locally, nationally and globally?
- And what policies and practices must we consider and adopt to address both cultural and resource management needs?

Quality of Life

Our quality of life in Hawai'i is closely tied to Aloha, which is defined by three principles:

- Spirituality
- An honoring of people, places, and things
- And stewardship for future generations

In our island state, Aloha is demonstrated by:

- Cultural blending and equality
- The importance of family
- Interdependence and acting for the greater good, and
- Mutual care, respect, hope, and generosity

In attempting to live with Aloha, our quality of life in Hawai'i faces three major challenges -- wealth distribution, health status, and education.

In terms of the distribution of wealth:

- The top 20% of income earners receive 60% of total income
- The number of homeless people rose an estimated 39% from 1999 to 2003

A growing underclass means less self-sufficiency, lower educational levels, and more stress on community resources

Regarding our health status:

- Hawai'i residents have longer life expectancy and lower mortality from heart disease and cancer than in the rest of the country
- This also means a larger elderly population with a greater demand for health care
- Negative trends include hypertension, cholesterol, diabetes, and obesity
- A number of locales have been designated as medically underserved areas

Poor health compromises employment, education, and our sense of well-being.

In looking at our educational status, we find that:

- 80% of those 25 and older finished high school; and 26% of these people completed four years of college
- In 2004, 38% of public school students met proficiency standards for reading; 18% met standards for math

Hawai'i's youth need solid educational foundations to fill jobs that are technologically-based and globally competitive.

For the future, as we work to sustain our quality of life, Hawai'i residents can choose to:

- Grow jobs, wages, and educational achievement



- Reduce disparities
- And protect our lands and ocean

Or we can choose not to.

In 1959, the state designated itself as “The Aloha State.” The other contenders at the time were “The Sugar State” and “The Pineapple State”.

Economy

Our standard of living depends on natural capital that is essential to sustain life.

The central principles of “positive sustainability” are:

- Interdependency - where the economy, community, and the environment are treated as a linked whole
- Dynamic efficiency - which means using a resource to bring maximum benefits over time, as opposed to never using the resource; and
- Intergenerational equity - meaning that we should not deplete resources if it will prevent future generations from being at least as well off as we are now

In looking at changes in Hawai'i's economy from the 1950s to today, we find that:

- Agriculture declined from 12% of income to less than 2%
- Tourism rose from 2% of income to 25%
- And government increased from 25% of income to about 33%
- Tourism represents about one-fifth of the state's economy
- Technology jobs numbered 14,000 in 2005, about 2.2% of the workforce

Since 1970, inflation-adjusted income grew by 44% in Hawai'i compared to 68% for the rest of the country. The main factor leading to slower income growth is the sub-par job skills of residents and inadequate educational achievement.

For the future:

- Tourism is a mature industry and will not be the major driver of growth
- Less skilled workers will fall further behind in a knowledge-based economy
- Tax credits targeted toward specific sectors such as high tech are of limited value
- Economists prefer moderate and predictable taxes, efficient regulation, and a high quality workforce
- The overriding need is for improved results from our educational and job training systems and the alignment of educational goals with anticipated job requirements

Population

About our population

- Hawai'i's population was 1.3 million in 2005
- It is projected to increase by 13,000 people per year until leveling off in 2020
- Hawai'i is 7th in the nation in the percent of population 65 and older

Migration is the biggest driver of population change in Hawai'i

- About 9,000 people migrate to Hawai'i each year
- We have a high rate of international migration; 25% of residents speak a language other than English at home

“Carrying capacity” is a theoretical concept that cannot be calculated exactly.

Population size exists in a dynamic, evolving relationship with infrastructure.

- There is constant transformation in the economic system
- Carrying capacity is based on the view that Earth can support only a finite number of people and that population growth is harmful to the economy
- Economists believe that some population growth is necessary for economic growth, or at least, that the two are compatible
- The roles of technology and social infrastructure are critical

For the future:

- The aging of our population may be more important for planning and policy than the total number of residents
- The drivers of population change -- childbearing and migration -- are largely matters of personal choice. Policies affecting these choices need to be based on a general consensus



Environmental Quality

A healthy eco-system provides humans with food and water; regulates flood, drought, and land degradation; supports soil formation and nutrient recycling; and provides for cultural and spiritual practices as well as recreation. Eco-system processes interact. Soil and water quality are closely linked. What happens in the mountains affects the ocean.

Hawai'i's history has been one of degrading of natural resources through overuse and loss of habitat.

- One-third of all endangered species in the U.S. are in Hawai'i.
- There are 343 marine alien species here
- 64% of streams and half of bays and estuaries have been designated as impaired. Still, 95% of our shorelines show good water quality
- 73% of our public water supply wells contain chemical compounds, though levels do not exceed federal standards in most cases
- The shift from plantation to diversified agriculture means less pesticide but a greater variety of pesticides are used
- Land and water management is done by different levels of government rather than traditional, mountain-to-the-sea, integrated management

A number of resource management initiatives have been instituted, such as:

- Federal, state and county regulations
- Environmental partnerships such as our nine watershed partnerships
- Invasive species councils
- Marine coastal protection measures

Hawai'i still has clean water, productive soils, regulated weather, and beautiful landscapes. For the future, will we plan and act to sustain these resources? How should our plans address future uncertainties such as the effects of global climate change?

Water

Hawai'i has good supplies of clean water for now. However, the State Water Commission directly regulates water use in several areas where aquifer withdrawal exceeds 90% of sustainable yield. The recent past has seen its share of water-related disputes, including litigation over Waiahole Ditch and diversion of streams on Maui for irrigation.

All fresh water begins as rain.

- 40% evaporates; 30% runs off in streams or other surface waters; and 30% becomes ground water
- Precipitation has decreased 20% over the past 90 years

- Hawai'i's streams provide 50% of the water used for irrigation; are habitat for unique species; and support Native Hawaiian gathering practices
- No stream meets quality standards for non-sewage related bacteria but the risk of illness remains low

- 98% of our drinking water is ground water
- Water use fell 52% from 1980 to 2000 due to the decline in agriculture
- Pricing for water varies widely by county. Fees cover the cost of delivering water, not the water itself

- 82% of Honolulu's delivered water is returned as sewage wastewater
- 16% of wastewater is reused
- Five major sewage treatment facilities are in non-compliance with the Clean Water Act

For the future:

- Water pricing currently does not support conservation. Will people change their practices anyway?
- What are people willing to do or pay to maintain the quality of our water?
- And what should be the appropriate roles of the state, the counties, each island, communities, businesses, and households in managing our water resources?



Energy

95% of our primary energy supply is imported. Hawai'i's energy comes from:

- Petroleum - 90%
- Coal - 5%
- And other sources - the remaining 5%

Energy use falls into four categories:

- Transportation - 50%
- Industrial - 23%
- Commercial - 14%
- Residential - 13%

In the transportation category,

- Gasoline - accounts for 430 million gallons used each year
- Aviation fuel - 350 million gallons
- Diesel - 210 million gallons

For homes,

- Electricity is 90% of the energy used
- Liquid gas and propane - 6%
- Solar hot water - 4%

The following are some alternative energy sources, each with issues to consider:

Biomass

- Increasing use of alternative fuels such as ethanol for vehicles is legislatively mandated; 40 million gallons of ethanol each year is currently imported
- Growing crops for energy will have impacts for land, water use, and environmental quality

Garbage to energy

- 40% of solid waste is imported paper products and petroleum-based plastics

Geothermal

- Steady, renewable source
- Currently, Puna Geothermal produces about 30 megawatts (good for 30,000 homes).
- Limitations include geography, existing land use, noise, and creation of waste materials



Hydropower

- Emissions-free
- But it does have impacts on streams and habitats
- Currently, 32 MW are produced on Hawai'i Island, Kaua'i, and Maui

Solar

- Renewable but not available at all times
- Now providing hot water for 80,000 households
- Photovoltaic - will become more attractive as electricity costs rise

Ocean Energy

- There was an ocean thermal project in the '90s; there have been none since
- Tidal and wave action - being tested on a modest scale
- Harnessing this resource may impact near shore environments

Wind

- Renewable but not constant
- And there are issues around transmission, noise, and aesthetics

Possible indicators for measuring change in our energy landscape:

- Local energy production and net import dependence
- Efficiency of fossil-fuel based energy production
- End-user prices
- And greenhouse gas emissions

For the future, most of Hawai'i's energy use is fossil fuel dependent and not sustainable. Sustainable energy reconciles the goals of available energy for all and preservation for future generations. Sustainable energy approaches include conservation, increasing the efficiency of energy production and use, and development of alternative sources. It will be costly to convert to renewable sources but Hawai'i is a good place to prove new technologies because of existing high energy prices.

Agriculture

The history of agriculture in Hawai'i has been marked by:

- Profit maximization and the effects of outside market forces (e.g., foreign competition for sugar and pineapple)
- And decline in plantation crops, replaced to a small degree by diversified ag

About 249,000 acres are considered prime ag land, suitable for:

- Crops - 150,000 acres
- Grazing - 44,000 acres
- Forestry - 25,000 acres
- And other uses - 30,000 acres
- Hawai'i has 11 of 12 soil types and 10 of 14 climate zones - ideal for diversified agriculture

The current market is not conducive to a long term commitment to agriculture.

- Low taxes on ag land mean that owners can afford to hold fallow lands while waiting for an improved market
- Farmers cannot get long term leases, which limits investment

80% of what we eat is imported

- Most produce is imported
- Local beef accounts for 6% of the total consumed in the state
- Local milk production is about 35% of the total; and increasing to 70% self-sufficiency would require 8,000 additional milk cows and 10,000 acres of land

For the future, Hawai'i cannot supply all of its food needs because of limited land supply. An additional 261,000 acres would be needed just to meet our current needs. However, Hawai'i can reduce its dependency on imports and pursue other ag-related opportunities:

- In 2005, only 102,000 acres made it into crops -- more of our existing ag land could be put to use
- Aquaculture is growing in Hawai'i, with kampachi and moi being farmed in ocean enclosures
- Organics are a prime opportunity as demand nationally is growing
- And agricultural tourism is one of the fastest growing tourism sectors

Hawai'i residents are connected to the land. Our love of green, open spaces is in our character and is reflected in our laws. On the other hand, development increases profits, can help meet demand for affordable housing, and gives a boost to the economy. What will Hawai'i's 2050 residents think of decisions made today to urbanize agricultural lands?

Land Use

How we use land reflects on our identity and how we choose to live. Hawai'i's land use history has witnessed battles fought over Kalama Valley, Waiahole Valley, Sandy Beach, Hokulia, and Wa'ahila Ridge. Land is limited, leading to competing uses. Land ownership is also concentrated. Of Hawai'i's 4.1 million acres:

- Government owns 38%
- Eight large landowners own 20%

Of all the land in the state:

- 48% is in conservation
- 47% is designated agricultural
- Less than 5% is urban
- 0.25% is rural

In the last 20 years - ag lost 36,000 acres; urban gained 29,000 acres; and conservation gained about 7000 acres

There have been many land use laws and plans as government attempts to control the actions of major landowners. However, their implementation has been problematic:

- Development approvals take too long, with duplicative state and county reviews and uncertainty about what can and cannot be done
- There is a heavy reliance on litigation
- We do project-by-project regulation instead of effective planning
- There is poor state and county coordination on development of infrastructure
- And there is limited public participation in long range planning

For the future, sustainable land development will mean:

- Compact development, which is more energy efficient
- Green building in urban areas for both residential and major buildings
- Protecting water recharge areas
- Maintaining habitats of native species and controlling invasive species
- And preserving agricultural and rural lands and open space

The role of land use planning is to create human, sustainable environments. This will require continuing dialog between policy makers and the public regarding the common good.



Holomua Kākou and the *Paradise Index*

Centralized planning must give way to deliberative processes that engage citizens in long-term consultation. Such planning would involve:

- Local policy partnerships that coordinate solutions among public and private sectors and civic organizations
- Planning for transitions brought on by global changes
- Revitalization of a cultural economy that balances cultural uniqueness with material sustainability
- A coordinated legislative agenda which is itself sustainable over time
- Specific measurements that enable sound decisions based on good information
- And creation of a *Paradise Index* that will show us how individuals, families, schools, businesses, communities, and government are doing in their efforts to create a more sustainable Hawai'i



The Future: A Call to Action

The final page of the Issuebook contains a statement that in part says:

There is no authority that can guide a citizen toward a sustainable future. Rather, it is the citizen who must serve as the guide, showing the way to others by personal example and action. Sustainability is not a government program. It is here, it is now, and it involves everyone.

We are guests in a land of incredible beauty and generosity, with crystalline water and fertile land. Our record here has been spotty, if not destructive and shortsighted. Many have been at work for years trying to reverse that, and through their work have regained a sense of how they fit in the world, of their duties to people now and to come. Now the rest of us must choose, individual by individual. The moment is at hand. The future is watching.