

Changing Our Lives, and Live Better Let Consumers Choose Wisely

2010 - 2011

Environmental Public Health Leadership Institute Fellow:

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EXECUTIVE SUMMARY:

With pronounced global climate changes, most of Earth is enduring through the extreme weather such as the extreme hot (42°C in Argentina, South America) or wet (the 45 days plus continuing rain in Queensland, Australia) in the southern atmosphere, and extreme cold and snowy weather in Northern atmosphere, December 2010 is the coldest December (the average temperature is -1 degree C) for England in 30 years, and -23 degree C in Northern India. The rapid usage of energy and material has been attributed at least partially for the phenomena

Efforts have been made to slow down the trend through labeling products to alert the population/consumers and in turn, to let consumers to choose wisely. MPG label on automobile, energy star label on appliance, LEED label on structures have been effective to certain extent. Most of them address certain aspects of the conservation efforts.

If, a complete label, which addresses the efficiency of making the product, and the efficiency of using the product, and the content of the product, good actors (nutrition) and bad actors (fat, cholesterol, lead, mercury, heavy metals and many others), could be put on every product, the responses (consuming behaviors) from the consumers will change the behaviors of the manufacturers, retailers and vendors, and the trend of rapid usage of energy and material will then slow down.

This project has designed just such a label, and efforts are made to reach out to stakeholders such as legislators, government agencies, and retailers such as Wal-Mart, and some attentions are received. It is just a beginning of a long hard road. Continuing efforts are required to make it happen, and we are prepared to take the challenge.

INTRODUCTION/BACKGROUND:

Five and six weeks straight hot and dry weather in Argentina, South America has propelled the wheat market to another high and 45 days plus continuous rain in Queensland, Australia has also boosted the sugar price to the new high ever, and the rain also impacts on the export of the 1/3 of the world production of the refined coal, and translated to the 100 dollars increase on the price of the refined coal used by steel industry. These are the direct evidence of the extreme weather actually impacts everyone on Earth through the prices of food and industrial products. Furthermore, December 2010 is the coldest one for England in the past thirty years, and -23 degree in Northern India was also the coldest ever since they keep the record for the past 60 years. The rapid usage of energy and material has been attributed at least partially for the phenomena by many scientists¹ (http://en.wikipedia.org/wiki/Climate_change_mitigation.)

The climate changes in the past decade (in U.S.) have been documented by National Climate Data Center² (<http://www.ncdc.noaa.gov/extremes/cei/index.html>). The following two graphs (Figure 1 & 2) demonstrated the more visible changes as one of the three parameters in Climate Extreme Index (CEI) which is based upon three parameters (1. Monthly maximum and minimum temperature. 2. Daily precipitation. 3. Monthly Palmer Drought Severity Index (PDSI)). Over the

past decade, about 20-25% of the U.S. has been experiencing monthly maximum temperatures much above normal, and while about 25-35% of the U.S. has been experiencing monthly minimum temperatures much above normal. It gives the credence that climate changes are occurring in the recent years, and scientists could still debate what the root causes that effect the change are. However, we know that the world is consuming much more resources than ever before with the increase of population and global economic growth, and the most important of all: **Consumerism**.

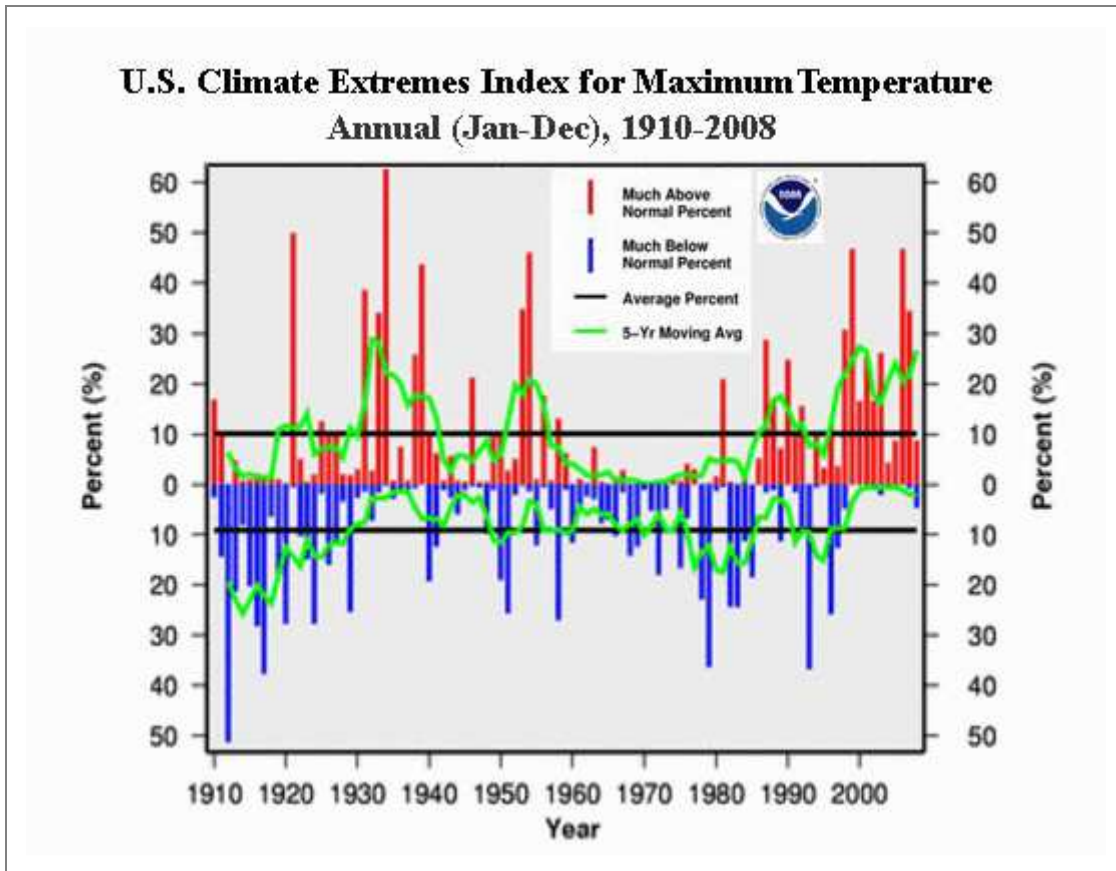


Figure 1. The Annual Climate Extremes Index (CEI) for maximum temperature, updated through 2008, shows that 20-25% of U.S. has had maximum temperatures much above normal over the past decade. Image credit: [National Climatic Data Center](#).

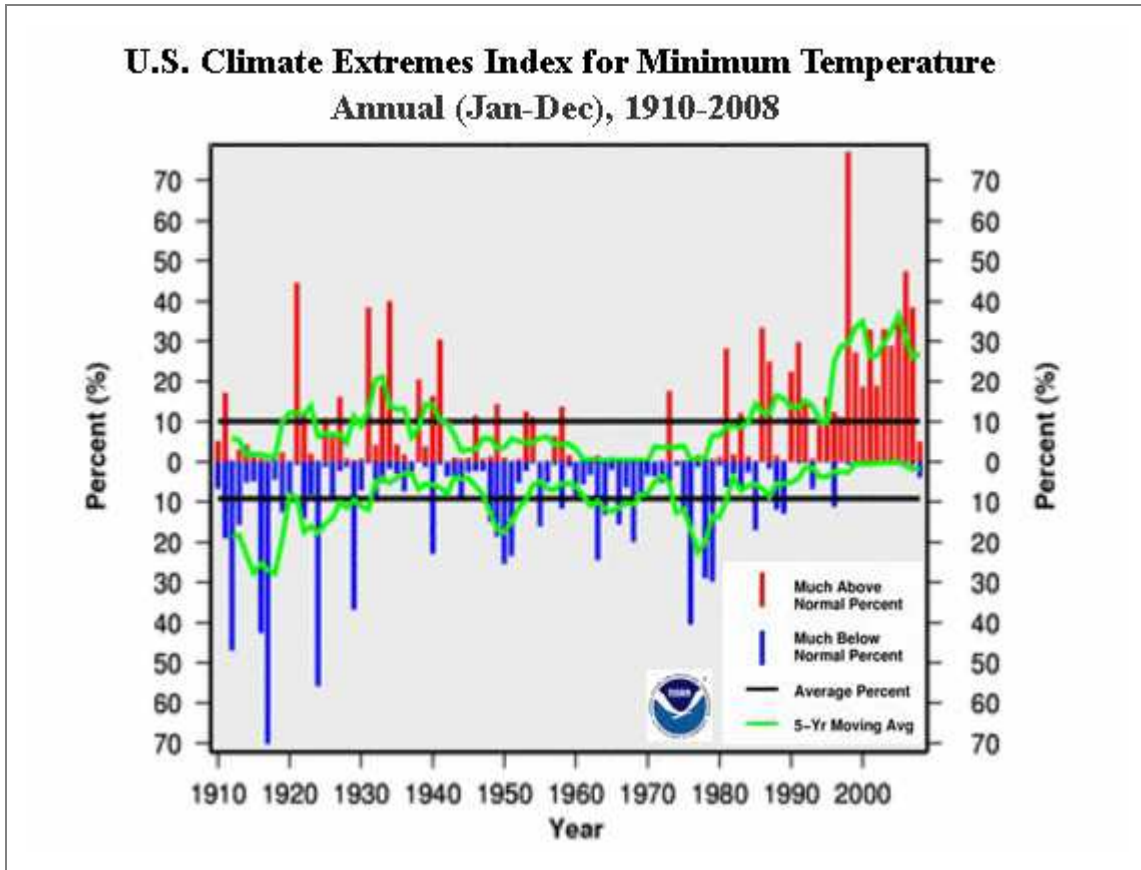


Figure 2. The Annual Climate Extremes Index (CEI) for minimum temperature, updated through 2008, shows that 25-35% of U.S. has had minimum temperatures much above normal over the past decade. Image credit: [National Climatic Data Center](http://www.ncdc.noaa.gov).

We should not try to curb the economical growth by stop using energy and material, and cause a world-wide recession/depression, but we should try to encourage the consumers to change the way they consume. One (maybe the only one) of the ways to achieve that is to give consumer all pertinent information they need to make wise decision.

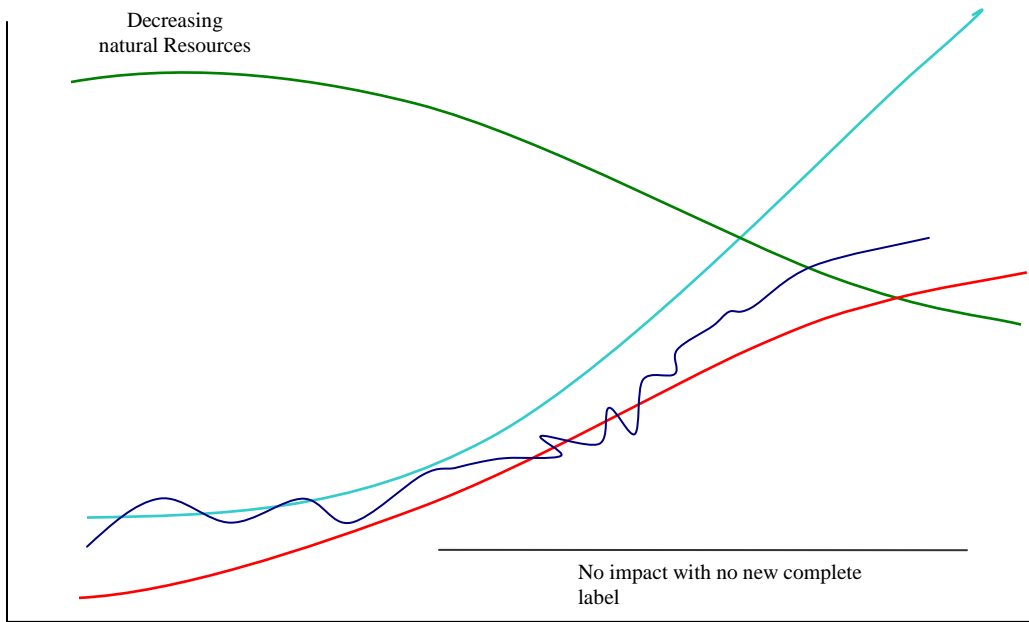
Information, as described in Wikipedia, is any type of pattern that influences the formation or transformation of other patterns. Hence, if a label on product/building contains all the pertinent information that could address all the considerations a user has or should have; the label would help the consumers to choose the best product possible to fulfill the user's desire in using this product/building.

In order to develop the new comprehensive label contains all pertinent information, here is the methodology used for this project

Problem Statement:

Why couldn't we slow the rapid usage of energy and material in the world? (The practice of rapid usage has, at least, partially caused the wild climate changes we are experiencing in the world)

Behavior Over Time Graph:



Key variables:

Increasing in human population

Decreasing natural resource, with modifying slope if with consumer intervention

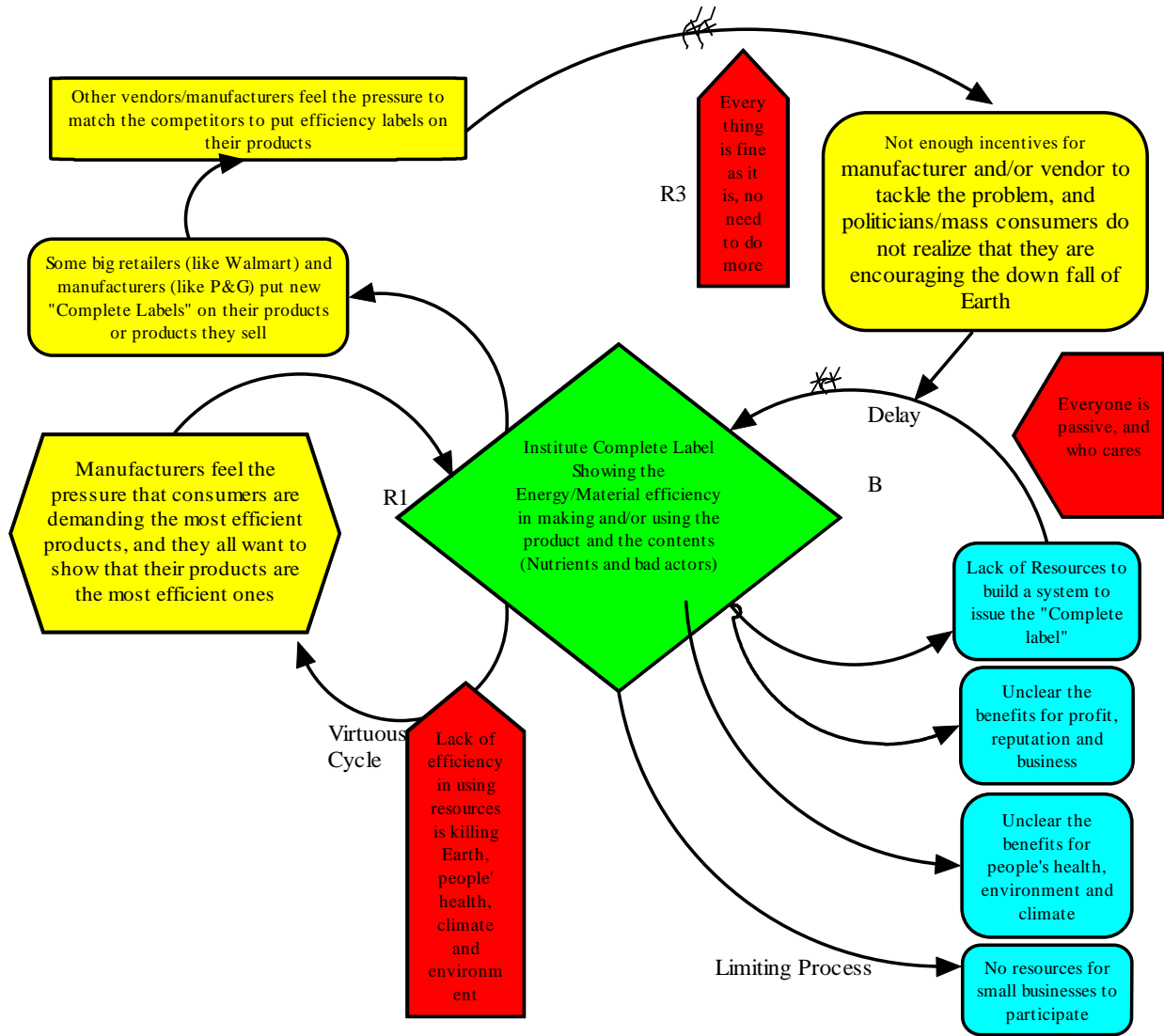
Increasing human chronic diseases, with modifying curve if with consumer intervention

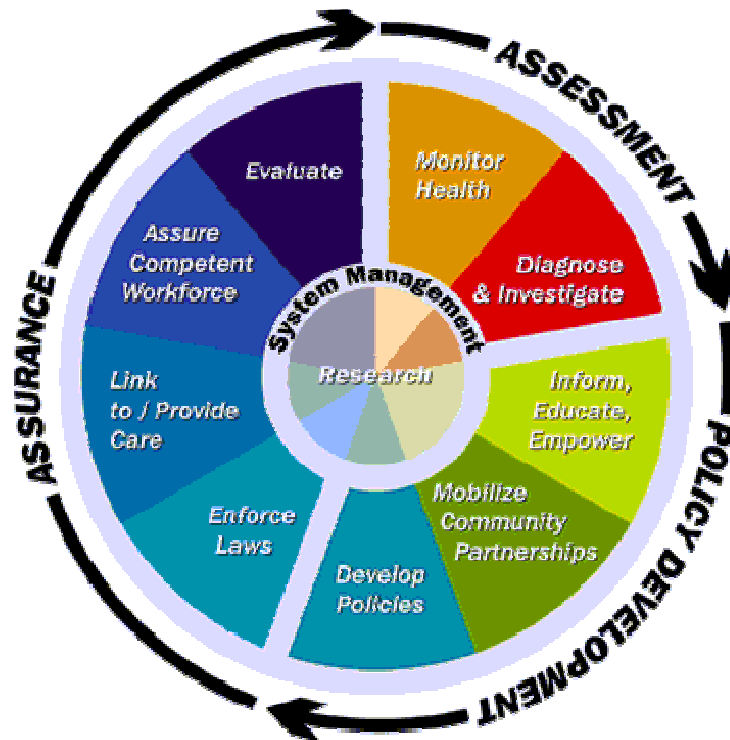
No impact with no new complete label

Reactive efforts to consumer directing with their dollars

Causal Loop Diagrams and applicable Archetypes:

Casual Feedback Loop





National Goals Supported

1. CDC Health Protection Goals <http://www.cdc.gov/about/goals/default.htm> or meets one or more of the Healthy People 2010 Objectives <http://www.cdc.gov/nchs/about/otheract/hpdata2010/abouthp.htm> .

Goal I: Build Capacity

This project would develop/locate funding streams to support the Complete Label System, and the funding would strengthen and support in building capacity environmental health services as part of augmenting and supervising the implantation of the Complete Label system.

Goal II: Support Research

This project would develop the standards and testing protocols to support the Complete Label System and this process would strengthen and support in building capacity for environmental health research as part of augmenting and supervising the implantation of the Complete Label system

Goal III: Foster Leadership

This project would develop many leaders in advocating and supporting the erection of the Complete Label System.

Goal IV: Communicate and Market

This project would need to communicate and market the concept of the new “Complete Label” system to populations, leaders both in public and private sectors. It needs constant revamping and reinventing of the outreach messages that promotes the “Complete Label” system and also the environmental public health services.

Goal V: Develop the Workforce

This project would develop a good size of competent workforces including environmental public health service sector in advocating and supporting the erection of the Complete Label System.

Goal VI: Create Strategic Partnerships

This project would need to create strategic partnerships among public agencies, legislatures, private sectors, manufacturers, vendors and various NGOs in the community to make the “Complete Label” system happen.

10 Essential Public Health Services

1. [Monitor](#) health status to identify and solve community health problems.

This project has identified that level of the consumption of energy and materials correlates well with the level of chronic/acute health issues due to the pollutant and climate changes.

2. [Diagnose and investigate](#) health problems and health hazards in the community.

This project has identified that reducing the consumption of energy and materials by consumers would reduce the environmental pollution, and would reduce chronic/acute diseases due to the pollutant and climate changes.

3. [Inform, educate](#), and empower people about health issues.

This project has devised a new Complete Label (CL) that would inform all consumers (every one on Earth) with the manufacturing and utilization efficiency and the nutrition and harmful content, and empower all consumers to use their dollars to direct the society into a more conserved/sustainable consumption and reduce the environmental pollution, and improve the health of general population.

4. [Mobilize](#) community partnerships and action to identify and solve health problems.

This project suggests that the only way to make an impact is to organize the communities and demand for a change, and use the consumption power to make the change for the better.

5. [Develop policies and plans](#) that support individual and community health efforts.

This project is advocate the erection of new Complete Label (CL) which would require legislature's actions at all levels (Local, city, county, state and federal), and it has happened in many local jurisdictions such as "Mandates no more soft drinks and junk food within school districts." This project needs the adoption of "Complete Label" by many jurisdictions within their rights, and demonstrates the power of "Complete Label" and how difference it could make. Then a national campaign could be much more successful.

6. [Enforce](#) laws and regulations that protect health and ensure safety.

This project brings the "Complete Label" for all products including food and child products. It would force the processors/producers/manufacturers to watch for the bacterial, dye, pesticide contamination, lead and other heavy metal contamination to protect the vulnerable populations. The label would serve as the legal basis for all the enforcing agencies to prosecute the violators.

7. [Research](#) for new insights and innovative solutions to health problems.

This project identifies that "we" as the consumers are the most important factors, and we have the power to change the downward trend in terms of misuse of energy and materials, and we could also improve the general health of the populations through our actions.

Core Values and Guiding Principles

Accountability -This project has emphasized that "we" are all accountable for our own actions that impact the environment and "we" also have the power to change that. That is the ultimate "accountability."

Collaboration - This project needs so many individuals/communities/organizations/legislatures/all layers of governments to work together to erect the new "Complete Label." It needs the ultimate collaboration to succeed.

Innovation - This project's new "Complete Label" would need the establishment of numerous standards and numerous testing to make sure the accuracy of the label, and tremendous efforts are ahead for all of us to work toward it.

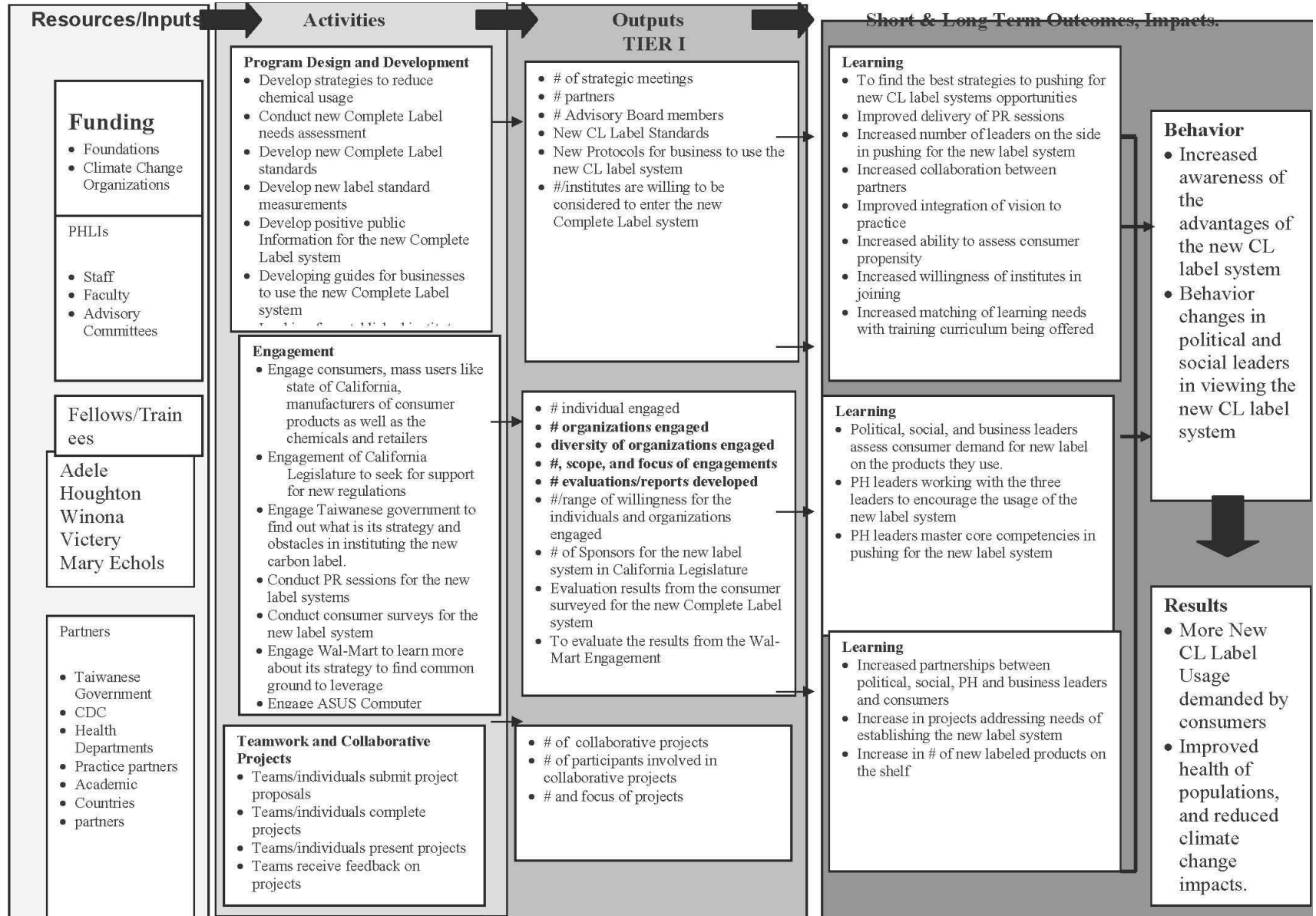
Integrity - This project would require that all layers of the supplying, manufacturing, retailing, testing, certifying to have the highest integrity to make the new complete label system a success.

Respect - This project would require that all layers of the supplying, manufacturing, retailing, testing, certifying to respect the other identities to make the new complete label system a success.

Logic Model:

EPHLI Logic Model: Kevin Chao r.01/15/11

Goal: To reduce total energy/material usage in the world (by establishing a new Complete Label Usage (CL) label system), and in turns to reduce the



The “Limits to Success” casual feed back loop answers the focusing question: Why have the labels with complete information not been put onto all the products? The trend of chemicals, energy and materials usage has been going up and up since the 1800. The oil consumption was 45 million barrel per day back in the second oil crisis in 1979, and today (thirty plus years later) the world is consuming 85 million barrel a day. Not only oil consumption, but also chemical, copper, steel and other materials consumption is on the rise at an incredible/unsustainable pace (at much higher pace than the population increase during the same time frame.) While there are labels such as “Energy Star”, “Fuel Economy Label”, “Nutrition Content”, “LEED Green House” would address various aspects of the products they rated, and most of the other products are nowhere near to have a new complete label instituted to give consumers the basis to choose from.

The only way that a new complete label could be widely accepted and adopted for all products is that all manufacturers and/or vendors feel that it is to their advantages to put the label on their products, and consumers demand for it. Then, the products with the new complete label sells better, and have the higher profit margins. If the manufacturers design their products using less energy/material, they would have a lower cost basis, and because the products they made could be identified as the more efficient products, consumers are more likely to choose these products over the products without labels or less efficient. Once the phenomena become prevalent, it would definitely change the business model for many manufacturers to adopt the new label.

It needs a lot more pressure from the consumers to encourage CEOs of the manufacturers, and vendors to do that. There are a few organizations such as Environment Defense Fund, etc. have approached big vendor like Wal-Mart and manufacturer like P&G. Dialogue is on going, and it would need a catalyst to push over the hump to get to the other side of the steep hill, and turn the effort into the positive cycle to get it start and stick.

We are optimistic about the new “EPA Fuel Economy Label,” and I hope that it will serve as a leading example for other products to develop similar labels to be put on. If we should have the labels on all products, I am sure that United States and other countries would be using much less energy, and materials, and the usage just maybe dial back to the pre-1980 levels, and the climate changes would be much less pronounced.

Methodology:

1. Identify relevant stakeholders such as legislators, retailers, manufacturers, consumer groups, government agencies and other conservation groups.
2. Survey the existing approaches/labels.
3. Proposed the improved approach.
4. Give the consumers all the information needs to make wise decision to reduce the usage of material and energy.
5. Working with all the stake holders to promote the improved approach.
6. Constantly revamping the message

1. What do people want?

- **Policy Makers:** Policy makers want to implement policies that address several priorities. In the case of climate/environment protection and energy conservation, a successful policy would improve the environmental quality, public health, economic vitality, and energy security for the area under its jurisdiction. Long-term policies such as a climate/environment protection and energy conservation plan must also include a mechanism to measure success.
- **Health Sector:** The health sector is under increasing strain from the growth in the areas of chronic diseases and the insurance industry's reluctance to pay for long-term care. As a result, the health care industry would support a climate protection/environment and energy/material conservation plan that could provide evidence of strong correlation between the plan's implementation and a reduction in key chronic health incidences/expenses.
- **Consumers:** Reduce health care insurance premiums, and less chronic health problems; they will if we could reduce the usage of chemicals, energy and materials and in turn to reduce the pollutions which leads to more acute and/or chronic health problems.
- **Retailers:** They want to increase their businesses and act responsible as the good corporate citizens should. The new complete label would provide the opportunity for them to do that.
- **Manufacturers:** They want to increase their volume, and reduce their cost of manufacturing by better designing their products and showing strong in the new complete label comparing with the competitors, and increase their product sales.

2. How have others tried to solve the problem previously? What happened?

There are many labels developed over the years by various government agencies/branches and organizations/associations to be used on the products/buildings people purchase with specific information that influence how people choose.

For example:

The nutritional label on the food products tells how many grams of carbohydrates, cholesterol, fat, sodium and other nutritional contents, and calories for the particular product.

Nutrition Facts	
Per 2 slices (64 g)	
Amount	% Daily Value
Calories 140	
Fat 1.5 g	2 %
Saturated 0.3 g + Trans 0.5 g	4 %
Cholesterol 0 mg	
Sodium 290 mg	12 %
Carbohydrate 26 g	9 %
Fibre 3 g	12 %
Sugars 2 g	
Protein 5 g	
Vitamin A 0 %	Vitamin C 0 %
Calcium 4 %	Iron 10 %

It helps the consumers to choose the more healthy products to consume. But, this label does not address how efficiently the food products are produced such as the amount of pesticide, fertilizer and fuel used.

The Energy star label (<http://www.energystar.gov/>) on the appliance tells how much energy it would use.



ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products and practices

It helps consumer to use more efficient product to use. But, it still does not address how much material and energy used to produce it, and whether it contains harmful chemicals/metals which it may impact the users' health.

The US EPA will institute a new label addressing the energy efficiency in using the vehicle across the classes.

New Fuel Economy Labels



As a new generation of cars and light trucks start appearing in dealer showrooms, EPA and NHTSA are introducing a new generation of "fuel economy" labels. The goal is to enable simple, well-informed comparisons across all vehicle technologies, including electric vehicles (EV), plug-in hybrid electric vehicles (PHEV), and gasoline/diesel vehicles. Help EPA and NHTSA decide on [the new label design!](#)



[New Fuel Economy Labels](#)

Again, it does not address how efficiently the cars/trucks are made and whether they contain any harmful chemicals and metals which may impact the users' health.

The LEED label for building is established by [U.S. Green Building Council](#) (USGBC).



LEED is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high-performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. It is a more complete approach than the previous three labels mentioned, but, it only addresses for the building materials and building. But, many other manufacturers such as auto companies should be able to use the information established in LEED such as carpets which meets and prefer to exceed (for the temperatures experienced in the car is much higher those experienced in the building). But, the LEED standards do not address the efficiencies in making the building materials. Hence, the LEED label could even improve itself further.

In order to develop the new comprehensive label contains all pertinent information, here is the methodology used for this project

California has started the mandatory green building code <http://www.bsc.ca.gov/default.htm> , the first in the nation, on January 1st, 2011. It mandates 20% reduction of potable water use within buildings, a 50% construction waste diversion from landfills, use of building finish materials, use of building finish materials that emit low levels of volatile organic compounds, and commissioning for new, nonresidential buildings over 10,000 square feet.

California Department of Public Health has initiated a Health Impact initiative to have all departments/agencies within the state governments of California to review their policies/work to reduce any environmental impacts, and it had the buy-ins from all the agencies and departments. Many agencies/departments are surprised to see how much impact they had on the environment and on the energy and material usage. It is a giant step forward, and we are proud of it. It is an internal process, and we could do it internally within the state government, and it is done. I have communicated this new complete label concept/initiative to the people who execute the brilliant first step, and the question comes back is "who will be the one could mandate the new label?" It amplifies the difficulty in propelling the concept to institute the new complete label.

What are the key steps to implement the new complete labeling system and how have they changed over time?

- a. How the standard of a fair label is established?

No standard is set, and setting a national standard is time consuming and a consensus is hard to come by.

- b. Where the funding is coming from?

It is possible to get the funding from industries, retailers, consumer protection agency, public health agency, environmental agency, or institute a new national sales tax and use the collected fund to fund the effort, or institute a new standard agency mandated by the Obama administration and comes with ample funding.

- c. How could get the manufacturers to participate in developing the label which is fair and everyone is on the same page?

It would need policy makers prodding as well as strong consumer pressure as well as peer pressure.

- d. Which organization is tasked to maintain the standard and test the products to make the labeler honest?

It could be US EPA and/or other suitable public agency and/or private organization which is perceived as the fair organization such as UL.

Proposed the improved approach:

Consumers are the keys to reduce the usage of material and energy. There are labels existed to inform consumers about some aspects of the products they purchased. But, there isn't a label covers the manufacturing efficiency including shipping part, the efficiency in using the product as well as the nutrition contents of the products consumers are buying. Hence, the consumers could not make the wise selection to curb the unnecessary usage of material and energy.

A comprehensive label with three parts should be established:

Part A tells the efficiency of making this product including shipping

Part B tells the efficiency of using this product (in terms of energy and material including maintenance)

Part C tells the content of products covering the element or compound content either with nutritional values and/or harmful substances such as lead and/or other harmful chemicals in food, toy and other relevant products.

This label concept is introduced to California Senator Honorable Leland Yee, and he is considering whether to introduce a bill to support to develop this label to be used in California. Approaching to other stake holders is on going.

Give the Consumers the Complete Information

COMPLETE Label for All Products

Part A the efficiency of making this product including shipping

Part B the efficiency of using this product (**energy** or **material**)

Part C the content of products covering the element or compound content
(**nutritional** or **harmful** content)

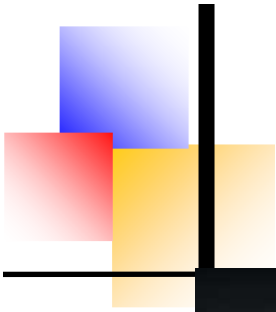


Barbie Doll Complete Label (Efficiency in using energy and material)

A (Efficiency in making): 60 (0-100 most Efficient) 3 lb CO₂, 1 lb plastic and plastic and cotton

B (Efficiency in using): 70 (0-100 most Efficient) Dry Clean may be needed when dirty

C (Contents): No lead, mercury, cadmium, arsenic, but may contain bisphenol-a, Vinyl Chloride monomer



2011 CADILLAC SRX

2011 Cadillac SRX Complete Label (e-efficiency in using energy and material)

A (e in making): 30 (0-100 most e) 12.5 ton CO₂ and, 1.5 ton metals and plastics.

B (e in using): 25 (0-100 most e) 20 mpg highway and 13 mpg city

C (Contents): Plasticizer monomer maybe harmful to you and passenger.

PROJECT OBJECTIVES/DESCRIPTION/DELIVERABLES:

Program Goal: To mitigate the acute/chronic health conditions and diseases that will be caused by climate change and/or environmental contamination

Health Problem: The increase in occurrences of chronic/acute health conditions and diseases that are attributed to climate changes and/or environmental contaminations.

Outcome Objective: To stop at a minimum and reduce the factors which contribute to the climate change and environmental contaminations at December 15, 2010.

Determinant: The rampant increases in the usage of energy and material in the developing and developed countries by all consumers purchasing more and more products without considering the efficiency of making and/or using the products and whether they contain harmful ingredients or not. This practice has further increased greenhouse and environmental pollutant emissions that contributes to the climate changes and further causes the acute and chronic health conditions and diseases. Consumers hold the key in forcing the manufacturers to produce the more sensible products which will use less energy and material, and no harmful ingredients.

Impact Objective: To develop a new complete label system to inform the consumers of the facts about:

1. The efficiency of making the product.
2. The efficiency of using the product.
3. List complete ingredients that the product contains.

With the complete information on the label, consumers could then use their dollars to direct manufacturers and/or vendors to design, manufacturing better products that use less energy, material to make and to use, and not containing any harmful ingredients like lead, mercury, bisphenol-A or other bad actors.

Contributing Factors:

1. Lack of public awareness that consumers could make the biggest difference in control of the amount of energy and material usages.
2. Lack of complete information for consumers to base their choices, and there are partial information of some of the products not all.
3. Lack of resources and authorities from the public sectors to force all vendors/manufacturers to label their products.
4. Lack of resources to establish agencies/laboratories to give fair and uniform information across the industries and sectors.

5. Lack of resources to assist the small and medium companies which could not afford to provide the complete information on their produced and vending products.
6. Lack of funding to have agencies/organizations to police the practice..

Process Objectives:

1. Illustrate the importance of consumer powers.
2. Illustrate the impact that a complete label would have on the consumers.
3. Engage and solicit allies in legislatures, public agencies and private sectors to push for a complete label system.
4. Once the concept is bought in by some sectors, and funding needs to be followed to carried through the concept and build the system.

METHODOLOGY:

1. Identify relevant stakeholders such as legislators, retailers, manufacturers, consumer groups, government agencies and other conservation groups.
2. Survey the existing approaches/labels.
3. Proposed the improved approach.
4. Give the consumers all the information needs to make wise decision to reduce the usage of material and energy.
5. Working with all the stake holders to promote the improved approach.
6. Constantly revamping the message

Events and Activities

- i. Lack of Resources: Find alternative ways to fund the efforts to reach out to all stake holders.

Action Plans:

- a. Talk to foundations to seek for support
 - b. Talk with California legislature to seek for financial support, and it is very difficult under today's economic climate with 26 billions deficits in the next two years (2010 and 2011.)
 - c. Find people who have the common goals through grass root, and thorough internet. It is going, but very little resource is yielded.
- ii. The benefits for the new complete label are not clear for stake holders. Continue to develop and revamp white papers/messages describing all the benefits for all stake holders.

Action Plans:

- a. Continue communicating with countries, government agencies *such as U.S. EPA) enterprises and other stakeholders about the net benefits they would have received when they institute the new efficiency labels.
- b. Working with CSTE to seek for their support in writing the white papers for this project. It is on going

- c. Continue to seek CDC to seek for their support in writing the white paper. It is still ongoing
- iii. Lack of resources for small vendors/small manufacturers: Need to find resources to assist them to do the right thing.

Action Plans:

- a. Talk to legislature in imitating a new law for a fee based program to collect a small assessment for all products, and use the collected fund to fund the small vendors and to establish the new complete labels for those vendors and manufacturers.
- b. Talk to Vendor and Manufacturing trade groups to seek for their support in setting up some funding to assist the smaller member in the trade groups. They are very reluctant under the current tough economic conditions, and it could be open up in 2011 if the economy grows stronger as economists have forecasted.

RESULTS:

1. California Senator Dr. Leland Yee was contacted and he is looking at the proposal and may sponsor a bill to endorse the "Complete Label" approach, No any California agency or agencies which should/would be responsible/execute for the bill are obvious, and any bill with no sponsoring agencies would become an orphan bill. Politicians are not too fond of sponsoring such a bill. More work is needed to find a home for such a bill.
2. Wal-Mart is demanding all their vendors to provide carbon foot print on all their products starting this year, and all the vendors need to be in compliance by the end of 2014. No products without carbon foot print would be on the shelf of Wal-Mart/Sam Warehouse beyond 2014. Wal-Mart is committed to remove 15 million ton of carbon foot print by 2015, and it is the way Wal-Mart to reach the committed goal. Wal-Mart has 100,000 vendors, and each vendor may have 10 vendors of their own, and that is one million vendors need to work on carbon footprint label. The competitors of Wal-Mart may have to join them in demanding carbon foot, and it is an inevitable trend that could not be stopped. This project will be mailed to the President of Wal-Mart for their considerations to expand the label system in the future.
3. ASUS Computer of Taiwan is a pioneer of carbon foot print, and they have committed to reduce the carbon foot print since 2000, and it demands all their vendors to provide the carbon foot print, and this project will contact this company as well to ask them to expand their efforts from the carbon foot print label to a complete label system.

CONCLUSIONS:

It is a long road before a more comprehensive label could be introduced. The funding issues, people's reluctance to accept the concept, establishing standard, establishing trust worthy testing agencies, the subsidizing for the smaller manufacturers and vendors to be in compliance to the new standard, etc. would be waiting for us to tackle. We need to take our initiatives, be brave and never look back.

LEADERSHIP DEVELOPMENT OPPORTUNITIES:

Kevin Chao

EPHLI Program and curriculum has assisted me to understand the problems we faced from the environmental point of view, and find the real cause through the system thinking methodology: It is the over-consumption by the population, and consumers are the keys to slowdown the tide.

EPHLI program also has the personal development program and provides coaches and mentor and many web-based courses on conflict management. This part has changed me drastically, and I realized I hold the keys to resolve any conflicts. The “me”(I could understand where others are coming from and how they feel) “me” (I will take other’s feeling and point of views into the consideration in any decision making processes)”me”(I will give others ample opportunities to express themselves) approach is the key to resolve any conflicts that are bound to happen between two or more humans together.

ABOUT THE EPHLI FELLOW

Kevin Chao is a well trained scientist and got his Ph.D. in chemistry from Yale University, and was working in an oil company (Shell Oil), an Engineering and Construction Company (M.W. Kellogg), and served as a vice president for a chemical manufacturing company (Southeast Soda Manufacturing Co. Ltd.). He also taught in colleges for a short period of time before venturing into the public health arena which he loves it very much. He helps California public health systems respond to emergencies which may impact 38 million Californians.

He is very enthusiastic about public affairs, and likes to debate with colleagues on public policies. He would like to see all people would be helped if possible and treated equally regardless of race, age, social status and any other differentiators. He would like to protect the public from the environmental hazards which existed everywhere since the industrial revolution 100 plus years ago. He is also interested in Environmental justice for all.

He would like to have more opportunities to contribute his best to the goals listed above. He is energetic and is willing to learn new things. He likes brain teasing games, and exercises like basketball, hiking, running, and fishing.