

## **RESILIENT COMMUNITIES: Game Rules**

**Purpose of the Game:** To enable those concerned about coping with emerging economic, energy and ecological crises to learn about and practice, through game simulation, responding to such crises and appreciating what is needed to build resilient and sustainable communities.

**Objective:** Players work cooperatively to respond to various 21st century crises as they affect the community. They assess the effectiveness of their efforts by collectively setting the community's Resilience Index. Game continues as long as the players choose to play.

### **Equipment:**

- *Community Vulnerabilities Matrix and 11 System Tokens:* This matrix shows the probability (horizontal axis) and potential severity (vertical axis) of 11 different types of system crisis that can affect the community. At the start of the game, players determine the initial positions of all 11 system tokens on the matrix to reflect their perception of actual vulnerabilities to crisis in their community. The position of system tokens on the matrix is affected by various event cards that are drawn during the game; some events will push a system 'over the edge' at which point players must deal with it as a crisis or collapse occurring in the community in real time. At the bottom of the Matrix is the Resilience Index, which is initially set to a score of 5 ('satisfactory'). As events occur and as the community members deal with them, the players collectively reassess the community's Resilience Index. An Index of 0-2 is considered 'unsustainable' and an index of 8-10 'exemplary'.
- *Risk Assessment Questions and Scenario Descriptions:* Three or four questions to consider in setting the initial position of each of the system tokens on the Community Vulnerability Matrix, and a crisis scenario and a collapse scenario description for each system.
- *Event Cards:* 86 cards describe various events that are drawn at random and which govern the progress of the game. Some events are beneficial; others are not, and increase the risk of crises occurring. The event cards include 16 'Black Swan' event cards, which must be managed the same way as a crisis. The drawing of an event card can be said to represent the passing of three months of time in the life of the community.

**Play:** (Note: Any number can play.)

1. The Community Make-up is determined:
  - Place the 11 Crisis Tokens on the Vulnerabilities Matrix as follows: Tokens 7, 8, 10 & 11 on space #1; Tokens 3-6 on space #2; Tokens 1, 2 & 9 on space #3. These are current risks of likelihood and severity for these crises for a typical community.
  - Review the Risk Assessment questions for each of the 11 crisis types and, by consensus, modify the initial risk assessments to suit the specific setting, situation, resources, infrastructure, self-sufficiency and dependence on central systems of your community. You may choose to leave a token where it is, or move it one space left or right depending on your collective assessment. If your community is exceptionally vulnerable to a crisis in one or more systems (e.g. live in an earthquake zone for system 10, a severe drought area for system 8, or an insolvent municipality for system 3) consider whether a crisis would precipitate a collapse (the scenarios beneath the questions explain the difference between a crisis and a collapse), and if you think it would, move that token to the upper row.
  - The Resilience Index marker is initially placed at 5 on the 0-10 scale.
2. Now, each player in turn draws an Event card, and follows the instructions thereon.
  - If the Event card drawn results in a crisis or collapse (i.e. one or more system tokens are now in space 4 or 8 of the Community Vulnerabilities Matrix), proceed to step 3.
  - If the Event card drawn is a Black Swan event card, proceed to step 3.
  - If the Event card is of any other type, or if the movement of Crisis tokens does not result in a crisis or collapse (i.e. no system tokens are now in space 4 or 8 of the Community Vulnerabilities Matrix) once any instructions on the card have been followed, proceed to step 4.
3. When a crisis or collapse occurs (i.e. one or more system tokens are now in space 4 or 8 of the Community Vulnerabilities Matrix), or when a Black Swan event card is drawn, the process is as follows:
  - Read the scenario for the applicable system crisis (token in space 4) or collapse (token in space 8), or the Black Swan event card, aloud.
  - The person drawing the card now facilitates the rest of the group in a 5-minute simulation of your community's response to this crisis, collapse or Black Swan event. Discuss your current preparedness for such a crisis/collapse/event and what you would do to mitigate and adapt to it. At the end of the 5 minutes, assess how well you think your community would fare if it faced this crisis/collapse/event, and,

- by consensus, re-set the Resilience Index accordingly.
  - If this was a crisis situation, move the system token from space 4 for the crisis you have weathered back to the space *above* its game starting position on the Matrix (i.e. space 5, 6 or 7), or to a different square if the group feels that is more appropriate. If it was a collapse situation, leave the token in space 8. [For Black Swan events, this does not apply.]
  - If there are more system tokens in space 4 or 8 of the Community Vulnerabilities Matrix, repeat this step.
4. The player completes their turn by placing their Event card in a discard pile.
  5. Play continues, with the next player repeating steps 2-4, until the group agrees to end the game. At the end of the game, players may wish to discuss what they learned about themselves, others, their community and the risks it faces, from playing the game.

### **Risk Assessment Questions and Scenarios**

1. Business System:
  - Q1: How dependent are your community's members on large employers for livelihoods, and how exposed are they to economic downturns and layoffs?
  - Q2: How dependent are your community's members' savings and pensions on the health and continued increases in stock market prices?
  - Q3: How vulnerable are your community's local small businesses to downturns in consumer confidence and spending capacity?
  - Q4: How dependent are your community's members on large retail chains for essential goods and services?
  - Crisis Scenario: A severe recession causes large employers to lay off half their staffs. Half of the contractors to these businesses go bankrupt. Half of retail outlets close and supplies shrink sharply in other outlets. Stock markets lose half their value.
  - Collapse Scenario: A stock market collapse wipes out stock portfolios. Most large businesses cease operations. Banks, oil and food companies, utilities and other essential businesses are nationalized. Accounts are frozen. Long lineups become common everywhere. Black markets sprout up and thrive.
2. Financial System:
  - Q1: How dependent are your community's members on availability of credit (credit cards, car loans, mortgages, student loans) at reasonable rates?
  - Q2: How dependent are local businesses and your municipality on availability of

credit (business and capital loans, venture capital) at reasonable rates?

- Q3: How prepared are your community members to deal with the collapse of the dollar (either runaway inflation or the currency becoming worthless)?
- Q4: How prepared are your community members to deal with chronic deflation (prices falling year after year, and wages falling even faster)?
- Crisis Scenario: Financial institutions announce a moratorium on all new loans, mortgages or renewals for at least a year. Credit card spending limits are curtailed and balances must be paid in full monthly. Usurers thrive. Chronic deflation sets in, with market prices for goods and services dropping 10% per year and wages dropping 20% per year.
- Collapse Scenario: After a period of hyperinflation (prices rise 1000% in one year) and devaluation, your national currency collapses entirely and is no longer accepted. All assets denominated in that currency (savings, pensions) become worthless.

### 3. Government System (includes Education and Health):

- Q1: How dependent are your community's members on government financed/run health, social service, unemployment, education, emergency, security and transportation services, payments and programs?
- Q2: How dependent are your community's members on government-sustained infrastructure: schools, medical institutions, ambulances, roads/bridges/ferries, tunnels, sewers and public utilities?
- Q3: How well would your community cope if the federal, regional, or municipal government went broke and abandoned or devolved services to communities or the private sector, or even dissolved like the Soviet Union?
- Q4: How well would your community cope if your country's largest neighbour's government failed, dissolving into chaos and unable to manage borders between it and your country?
- Crisis Scenario: As government revenues fall and service demand soars, your governments cut all services by half. Wait times soar, road and other infrastructure crumbles and remains unfixed, institutions are combined and horribly overcrowded. Social security, unemployment insurance benefits and government pensions are slashed in half. Emergency services are severely curtailed.
- Collapse Scenario: Your country follows the example of the Soviet Union, as the government, unable to provide services or even pay its workers, dissolves the federal government. Many regional and municipal governments follow, falling like dominoes. Government assets are sold at auction, and service contracts are

transferred to lower-level governments and institutions still functioning. Social security, unemployment insurance benefits and government pensions are eliminated. Emergency, education and most other government services are privatized.

#### 4. Food System:

- Q1: How dependent are your community members on food brought in from outside the community, region or country?
- Q2: How much of your community's food is bought from chain supermarkets rather than directly from local farms and markets?
- Q3: How dependent are your community members on processed (frozen, canned, packaged, restaurant, and pre-cooked) foods?
- Q4: How dependent are your community members on food produced in factory farms, large-scale corporate growing operations and other industrial agriculture facilities?
- Crisis Scenario: After the bankruptcy of many large "Big Ag" corporations due to a complex set of factors, supplies of foods produced and distributed by these corporations (imported produce, factory-farm products and most processed foods) are severely limited, with shelves mostly empty. Most chain restaurants and many independents close.
- Collapse Scenario: When the industrial agriculture system collapses, food importers, processors and large-scale operators all fail. Supermarkets close, and citizens must find food through local producers and co-ops. Most restaurants and all restaurant chains close, unable to find affordable supplies. Meat and dairy products become rare, luxury goods. Black markets flourish.

#### 5. Energy System:

- Q1: How dependent are your community members on energy (electricity, gasoline, heating fuels) that comes from non-renewable sources (fossil fuels)?
- Q2: How much of your community's food supply depends on the continued availability of inexpensive oil-based agricultural products (farm gas, fertilizers, pesticides) and inexpensive long-distance shipping from faraway farms?
- Q3: How dependent are your community members on non-fuel petrochemical products (plastics, synthetic fibres, pharmaceuticals etc.)?
- Crisis Scenario: Shrinking supplies of inexpensive fossil fuels lead to energy rationing: Gasoline initially on an odd/even day basis and then on a coupon system. Many airlines, truck shippers, taxi services and factory farms go out of business. Regional brownouts become common.

- Collapse Scenario: Almost all automotive, shipping, ferrying, non-organic farm, pharmaceutical, plastic manufacturing, and synthetic fibre businesses go under. Oil rationing becomes stringent and permanent, and black markets proliferate. Service stations mostly close, and cars cease to be used for non-emergency purposes. Scheduled power blackouts limit electricity use to certain hours. Many people in areas that require much home heating or air conditioning move in a mass exodus to places with more temperate climates.
6. Trade System (excludes trade in food and energy products):
- Q1: How dependent are your community members on imported products (books, paper, building materials, furniture, clothing, shoes, and household goods)?
  - Q2: How capable are your community members at making and repairing their own clothes, homes and furnishings?
  - Q3: How dependent are community members and local utilities on imported electronics equipment, parts and devices?
  - Crisis Scenario: As a result of political, economic and ecological crises in Asia, and soaring transportation costs, the availability of electronic equipment, many metals, books, paper, building materials, furniture, clothing, shoes, and household goods for import has been severely reduced. These items have quadrupled in price, and there are often long waits and delays. Personal electronics and cell phones must be repaired instead of replaced, and power and cell tower failures can take weeks to restore.
  - Collapse Scenario: International trade treaties have collapsed, long-distance transportation has become prohibitively expensive, and imported goods have become almost nonexistent except for emergency supplies. Domestic companies are scrambling unsuccessfully to relearn how to make and repair many, many goods that were offshored. Cell phone and internet networks are offline more often than on, and power outages are a daily occurrence; lack of local supplies of certain metals means electronics equipment must be reinvented, an expensive and long-term process. Only local materials are available for building and furniture-making and repairs.
7. Refugees (immigration, emigration and border security system):
- Q1: How prepared is your community to accept as many refugees as you have citizens, in a short period, if economic, energy and ecological crises make living conditions for humans in large parts of the world impossible?
  - Q2: How capable is your border security of coping with massive numbers of desperate refugees attempting to enter the country by land, sea and air?

- Q3: How politically ready is your community for a conversation on which countries you will accept refugees from, and from what countries and under what circumstances, with the knowledge that most of those you refuse will likely die?
- Crisis Scenario: As a result of domestic political, economic and ecological crises, the number of refugee applicants to your country quintuples, and the government reluctantly agrees to triple refugee quotas, and institutes triage processes to decide which half of applicants to admit. Every part of the country is asked to accept their share, but many areas refuse, threatening to block refugees at the border and expel those they find inside their borders. Racism and anti-immigrant violence flares everywhere, and neo-fascist parties gain political clout.
- Collapse Scenario: Global economic, energy and ecological system collapses cause over 2 billion people to flee their countries, using any means at their disposal to gain entry to unaffected areas. The flood overwhelms border security everywhere and most affluent nations now have almost as many recent refugees as citizens, with many more en route. War has resulted in many areas, and most nations, weary of the endless waves of desperate people, now have anti-immigration governments working together to stem the tide.

#### 8. Water System:

- Q1: How dependent is your community on water brought in from outside?
- Q2: How is your community's supply of water, for drinking, domestic, industrial, farm and energy production use (hydro, fracking, oil well management, nuclear, bitumen sands extraction) being affected by climate change, development and pollution?
- Q3: How well is your community positioned to defend its water supply from sale to corporate interests, export, seizure by governments of drought-stricken areas, accidental or deliberate poisoning, and exhaustion from overuse?
- Crisis Scenario: As a result of droughts, climate impacts, and increasing usage, water rationing has gone into effect. Watering lawns and gardens is prohibited, meters limit daily consumption by homes and businesses, and industrial uses that consume large amounts of water (much of the energy industry, and large-scale farms) have been shut down. The bottled water business has been nationalized.
- Collapse Scenario: Drought and thirst cause global death rates comparable to those of history's worst plagues and famines. Much of the world has imposed strict security around its water supplies, rationing is stringent and monitored and theft and waste are severely punished, though water crimes are lucrative and rampant. Most of Southern Europe, Mexico, Central America, the Mideast much of Asia has

become parched desert and degenerated into political chaos. Forest fires everywhere burn out of control. Countries with excess water are being threatened with invasion if they don't export, and oil and gas pipelines have been repurposed to transport water.

9. Housing System:

- Q1: How dependent are your community's members on sustained high housing values, rising over the long term, for their financial security and solvency?
- Q2: What proportion of your community's members are 'under water' (mortgages now greater than home or commercial/industrial property value) or would be if there was a significant downward adjustment to property values?
- Q3: How prepared is your community to deal with large numbers of abandoned homes and commercial/industrial properties (neighbourhood maintenance, security, repurposing for community needs)?
- Crisis Scenario: Home, commercial and industrial property values fall by 40% as a prolonged economic recession/deflation sets in. Sales dry up, and foreclosures become common as people are unable to refinance their mortgages. Some governments impose mark-to-market write-downs on mortgages, infuriating banks and pushing some close to collapse.
- Collapse Scenario: As market values for all types of property continue to plummet, and buyers become non-existent, banks fail and/or agree to let owners stay in their properties as long as they maintain them and pay at least 20% of their mortgage payments regularly. Many homes and most commercial/industrial properties are abandoned, boarded up, and/or occupied by squatters. Citizen groups 'liberate' many abandoned and locked properties for community purposes. Suburban areas and new subdivisions are worst-hit, with the former facing a mass exodus to the cities or rural areas, and the latter abandoned often before construction has even been completed.

10. Climate System:

- Q1: How prepared is your community for a major earthquake, tsunami or other similar natural disaster?
- Q2: How prepared is your community for major and unpredictable fluctuations in temperature (sustained heat/cold wave), precipitation (floods, droughts, blizzards), and winds (hurricanes, tornados, ice storms, coastal surges)?
- Q3: How much of your community will be underwater if runaway polar melt causes sea levels to rise several metres?
- Crisis Scenario: A heat/cold wave, flood, drought, series of blizzards, ice storms or

coastal surges (pick whichever is most likely for your community) has hit, knocking out power, paralyzing traffic and crippling government services for a sustained period of several weeks. Both productivity and crime drop sharply, and governments are chastised for lack of readiness but say such events will become commonplace in future and no amount of funding or planning can mitigate that.

- Collapse Scenario: A major earthquake, tsunami, or hurricane, or a permanent shift in local climate (drought, permafrost melting, large-scale regular flooding) (pick whichever is most likely for your community) has devastated your community, killing 20% of the population and leaving 50% of the population homeless. Authorities declare the community a disaster area, and many question whether it makes sense to rebuild.

11. Epidemiological System (pandemic disease vulnerability):

- Q1: How prepared is your community for a major human health pandemic (viral/bacteriological infection) affecting most local residents?
- Q2: How prepared is your community for a major pandemic (viral/bacteriological infection) wiping out or requiring extermination of most local farmed animals (cows, goats, poultry)?
- Q3: How prepared is your community for a major pandemic (insect, viral or fungal infection/infestation) wiping out most local food crops?
- Q4: How prepared is your community for a major pandemic (insect, viral or fungal infection/infestation) wiping out most local forests?
- Crisis Scenario: Climate change has allowed tropical diseases to migrate to temperate areas where local species have limited resistance. In rapid succession, a new beetle kills 50% of the trees in your local forests, a new fungus wipes out the entire year's crop of your area's most planted staple, fruit or vegetable plant; then an avian virus hits poultry around the world, requiring a sudden shift to other diets.
- Collapse Scenario: A new viral strain, highly contagious and lethal, has spread around the world in a matter of weeks. Virtually everyone in the world is infected, but about 20% of the population seems to have a natural resistance. Most others get terribly sick, but only about 5% die. But panic causes more problems than the disease, marketers of phoney preventatives and treatments prey on the terror, and health centres warn that such pandemics typically repeat in annual cycles, so there may be much more suffering to come. Paradoxically, as with the Spanish Flu pandemic, it is humans' immune system response to the virus that kills far more people than the virus, so the deaths are predominantly healthy adults, not the old, children or the infirm.