**CS465 – Design Team #5**

**Technical Design Document for:**

# Tribe to Survive

All work Copyright ©2017 by IPFW Senior Design Team #5, 2016-2017 Academic Year

Written by Daniel Johnson, T. Avery Eich, and Asad Ashur

Version 3.1

## **Family Attributes**

* The “Community” is comprised of all “Families”.
* Each “Family” has a number of “Households”.

1. Population of the whole family
   1. Population growth per season = (Prosperity \* Households) \* 0.5
2. Households – Number of Marriages Completed
   1. # Marriageable Men and # Marriageable Women
      1. Marriageable people occur by chance each season:
         1. Marriageable Chance per Household = ((Wealth \* Population) / Households) / 10,000.
         2. This marriageable person is a woman 52% of the time and male 48%.
3. Skill – Each of Activities: Hunting, Gathering, Farming, Production
   1. 10 (base) skill gained when focused each season.
   2. All Skills Start at 10.
4. Capability = ((10% of each Skill) / 100) \* Population. (Round Down)
5. Wealth = Sum of Value of all Raw Materials and Finished Goods
6. Prosperity = (Capability + Wealth) / Population
7. Needs = array of required amounts of finished goods
   1. Unmet needs trigger events.
   2. Fire Need = 0.50\*Population
   3. Clothing Need = 0.25\*Population
   4. Food Need = Population
   5. Based upon the above EFFECTIVE PROSPERITY = Prosperity \*

(MAX=1) ( (MAX=0.5)(Fire / 2\*Fire Need) + (MAX=0.5)(Clothing / 2\*Clothing Need) )

Thus Effective Prosperity is a portion based upon meeting (but not exceeding these values). Excess isn't beneficial. The needs are doubled for an averaging of their fulfilment which multiplies the prosperity.

## **Raw Materials**

|  |  |  |
| --- | --- | --- |
| Raw Materials | Wealth  Value |  |
| Bone | 6 | |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Activity | Bone | Clay | Fiber | Shells | Stone | Wood | Hide | Food | | Hunting | b |  |  |  |  |  | c | d | | Gathering |  | a |  | a | a | c |  | a | | Farming |  | a | b | a | a |  |  | c | |
| Clay | 3 |
| Fiber | 2 |
| Shells | 8 |
| Stone | 1 |
| Wood | 3 |
| Skins | 5 |
| Food | 1 |  |

* One (1) food is deducted for each member of the Population each season.
  + Food shortage will cause “starvation,” where half the people who lack food die while the rest starve but somehow survive.
* Activity Yield Modifiers:
  + a = 0.25, b = 0.4, c = 0.6, d = 1.0
* Finished Good Bonus (Table Below)
* Material Gain Per Season (for Family):
  + ((Community Capability \* 0.01) \* Yield Modifier) +
  + ((Capability \* 0.1) \* Yield Modifier \* Bonus Yield) +
  + (((Activity Skill \* Households Performing Trade) \* 0.1) \* Yield Modifier)
  + Round up

## **Finished Goods**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Good | Material(s) | Bonus Yield (0.01)X | Finished Good Bonus (X) | Bonus\*\*\*\*\*\*\* | Time Cost |
| Homes | 20 Wood, 4 Skins | Production, Farming | +.75X | REQUIRED To Marry, Reduce Fire Needs to 1 for 20 people | 1 |
| Tents | 10 Skins, 2 Wood, 1 Fiber | Gathering, Hunting | +0.15X | REQUIRED To Marry, Reduce Fire Needs to 1 for 4 people | 0.2 |
| Pottery | 5 Clay, 1 Shell, 1 Wood | Gathering, Farming | +.01X |  | 0.1 |
| Tools \* | 1 Stone, 2 Wood, 2 Fiber | Production, Hunting?? |  | Used by doing any activity | 0.2 |
| Jewelry | 5 Shells, 1 Fiber |  |  | -- | 0.25 |
| Clothes \* | 3 Fiber, 5 Skins |  |  | Need 0.25\*Population = Stock Each Season | 0.1 |
| Fire\* | 4 Wood |  |  | Need 0.5\*Population = Expended per season | \* |
|  |  |  |  |  |  |

* TODO
* Using Goods, Fire, Clothes, to proportion prosperity. 100 population uses up 50 fire each season. The same population with 5 houses uses 5 fire
* Wealth Value of Finished good sum of all raw material wealth values + 20\*Time to produce

\*TODO\* Create table with Activities on y-axis, Finished Goods on x-axis: “Finished Good Experience Offset” i.e. Number of Pots you have increases your gathering skill gain by 0.01% per pot.

## **Skills/Trades**

Experience gain each season = 10 \* (Households Participating) + Finished Good Bonus

## **EVENTS**

**Environmental Events**

* Globally effect all families
* Big Picture Environment/Season Migration Stuff

(Each chance is direct chance for each Event to fire for working on each activity)

TODO: Add a table such as below for each activity.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Chance | Event | F | Sp | Su | W | Effect |
| 2% | Floods | X | X | X | X | -20% Farming Yields |
| 8% | Good rain |  | X | X |  | +20% Farming Yields |
| 40% | Snow | .25X | .25X |  | X | -50% Gathering Yields |
| 4% | Severe Thunderstorm | X | X | X |  | Destroy Homes/Tents |
| 1% | Tornado | X | X |  |  | Destruction of Finished Goods |

Activity Events

* Participating in these activities =
* Chance of these Events happening

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Farming |  |  |  |  |  |  |
| Chance | Event | F | Sp | Su | W | Effect |
| 3% | Floods | X | X | X |  | -50% |
| 10% | Fertile Rains | X | X | X |  | +50% |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Gathering |  |  |  |  |  |  |
| Chance | Event | F | Sp | Su | W | Effect |
| 3% | Lost! | X | X | X | X | -50% |
| 10% | Strawberry Fields | X | X |  |  | +50% Food |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Hunting |  |  |  |  |  |  |
| Chance | Event | F | Sp | Su | W | Effect |
| 10% | Ambush! | X | X | X | X | -20% |
| 5% | Injured Bear | X | X | X |  | +50% |

**Family Events**

* **Families have random things that happen to them**

|  |  |
| --- | --- |
| Chance |  |
| 3% | **Twins!!** Add 2 or 3 to population of Family. |
| 1% | **Divource Family Breaks Up into 1 new family** |
|  | **Maybe Family ends but breaks into 2 new family** |

(Chance each season)

**Caused Events**

* **???**

|  |  |
| --- | --- |
| **Cause** | **Event Effects** |
| **Not enough Food** | **Starvation = Lose ½ population that lacks food** |
| **Not enough Clothes** | **Effective Prosperity penalty** |
| **Not enough Fire** | **Effective Prosperity penalty** |

**Historic Events**

* **Time Period Stuff Circa 1500's**

|  |  |
| --- | --- |
| Time (Year,Season?) |  |
| Pass By |  |
| Visitation |  |
|  |  |

Map Ideas:

