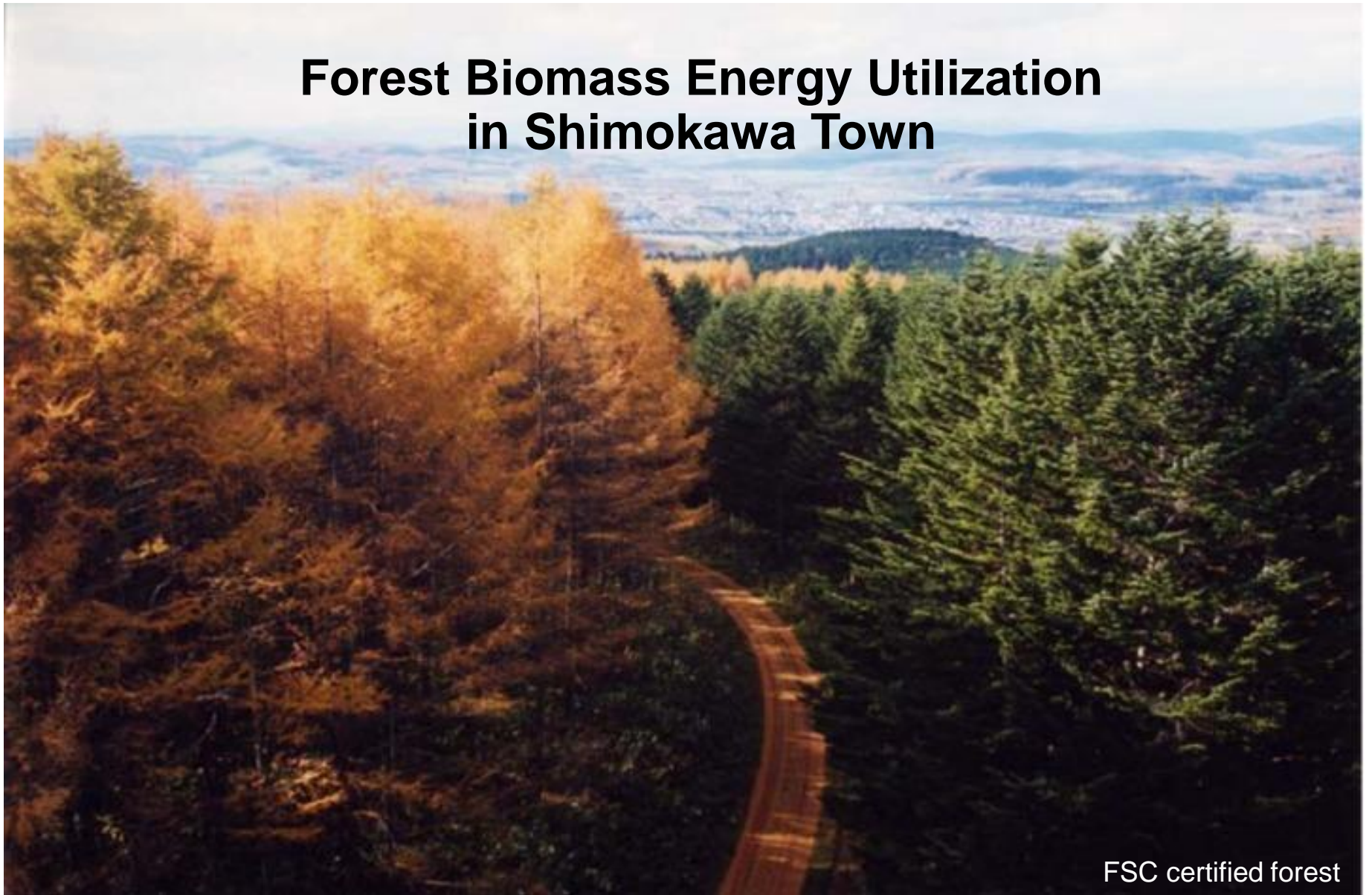


Forest Biomass Energy Utilization in Shimokawa Town



FSC certified forest

Oct.4, 2015

Yuji Takahashi

Shimokawa Town Office, Integrated Forest Industry Promotion Division, Biomass Strategy Office

Outline of Shimokawa Town



- ◇ Population : 3,468
(as of Jun. 1st, 2015)
- ◇ Area: 644.2km² (equivalent to total area of 23 wards of Tokyo)
- ◇ Temperature: 30°C in summer, -30°C in winter

- ◇ Forest: 88% of town area
- ◇ Farm land: 6% of town area
- ◇ Interregional ski jumping students: 41 (cumulative)
- ◇ : "Shimokawa Green"

POINT!
Producing world-class human resources



- ◇ Ski Jumping
- ◇ Fruit tomato, Asparagus, Wheat
- ◇ Ice Candle
- ◇ Forest culture



Existing Woody Biomass Boilers

Public Spa "Gomi-onsen"



Mar. 2005

Kindergarten



Mar. 2006

60% of heat demand in public buildings is supplied by woody biomass boilers

Seedling Facility



Dec. 2008

District Heat Supply System around Town Office



Mar. 2010

Aged Complex Institution



Mar. 2011

Public Housing



Mar. 2011

District Heat Supply System in Ichinohashi



May. 2013

District Heat Supply System for Elementary School and Hospital



Mar. 2014

Heat Supply System for Junior High School



Jan. 2015

History of Forest Biomass Energy Development

Cyclical Forest Management

1953 Acquired 1,221 ha of national forest
 1996-2003 Acquired 1,902ha of national forest



Log processing, distribution, and sale



Regional development through use of forest biomass for heat

1996: structural reform, administrative and financial reform, promotion of decentralization, municipal merger, reduction of tax allocation. Regional economic climate: price decline of crops, decline of purchasing power, etc.

Industry cluster: A strategy for regional economic development. Industries have comparative or competitive advantage formulate new related industries like a cluster of grapes.

1998 Shimokawa industry cluster study group
2001-2003 Regional renewable energy vision



2002 Biomass boiler for public spa

2005 Biomass boiler for kindergarten

2007 Biomass boiler for seedling facility

2009 Wood Fuel Manufacturing Facility

2009 Biomass boiler around town office

2009 Pellet boiler for Eco-house

2010 Biomass boiler for aged complex

2010 Pellet boiler for public housings

2012 Biomass boiler for Ichinohashi Bio Village

2013 Biomass boiler for elementary school and hospital

2014 Biomass boiler for junior high school

2014 Heat supply to public housings from town office's biomass boiler

Development of new usag of wood

- Woody biomass energy
- Housing using local wood (environmentally sound model house)
- FSC certification
- Pine essential oil
- Forest therapy, forest environmental education
- Carbon offset, etc



2008 "Environmental Model City"

2011 "FutureCity"

2011 "Comprehensive Special Zone for Regional Revitalization"

2013 "Biomass Industry City"

2014 "Model Case for Regional Revitalization"



17 mil JPY of cost reduction/yr -> Funding -> Replacement of boilers and child care support

60% of heat supply to public buildings switched to renewable energy

Small-scale distributed CHP system

Toward Energy self-sufficiency

"Industry grows where resource is." → "Industry grows where energy is."

Evaluations on activities toward “Future Forest City Shimokawa”

National Designations

- 2008 “Environmental Model City”
“Biomass Town concept”
- 2011 “FutureCity” “Comprehensive Special Zone for Regional Revitalization”
- 2013 “Biomass Industry City”
- 2014 “Model Case for Regional Revitalization”
- 2015 “Regional Revitalization Plan”

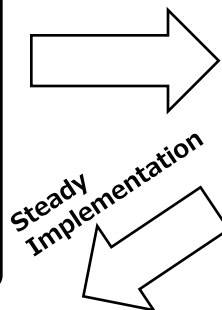
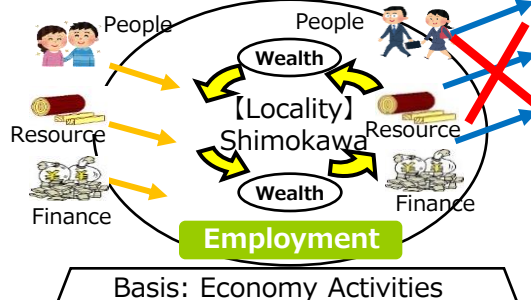


Image of Shimokawa Revitalization



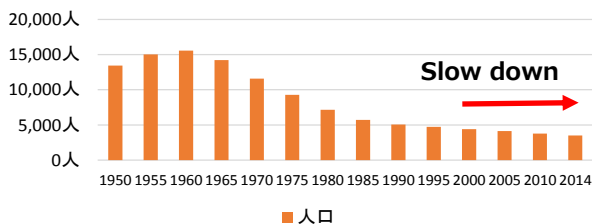
Realized Effects

Steady Implementation

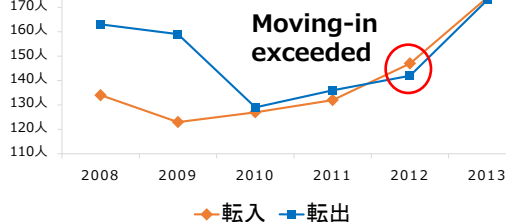
Demographics

FY	Population	Natural Dynamics			Social Dynamics			Change from previous year
		Birth	Death	Change	In	Out	Change	
2008	3,836	28	63	▲ 35	134	163	▲ 29	▲ 83
2009	3,772	15	50	▲ 35	124	154	▲ 30	▲ 64
2010	3,707	16	67	▲ 51	127	142	▲ 15	▲ 65
2011	3,641	13	58	▲ 45	132	136	▲ 4	▲ 66
2012	3,592	24	62	▲ 38	147	142	■ 5	▲ 49
2013	3,559	18	71	▲ 53	174	173	■ 1	▲ 33

Population in Shimokawa



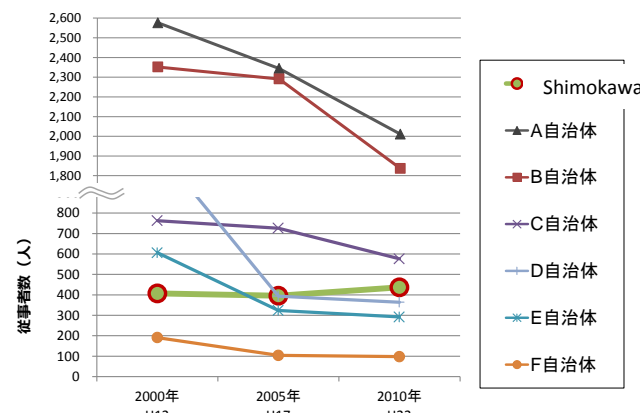
Social Dynamics



Population decrease continues but slowed down, and social dynamics is changing.

Number of Agriculture & Forestry Workers

Number of Workers in Shimokawa and nearby municipalities



The Number of the workers in key industries (Agriculture & Forestry) tends to increase in recent years. (Decrease in nearby municipalities)

Official land price

(as of Jan, 1st, 2015)

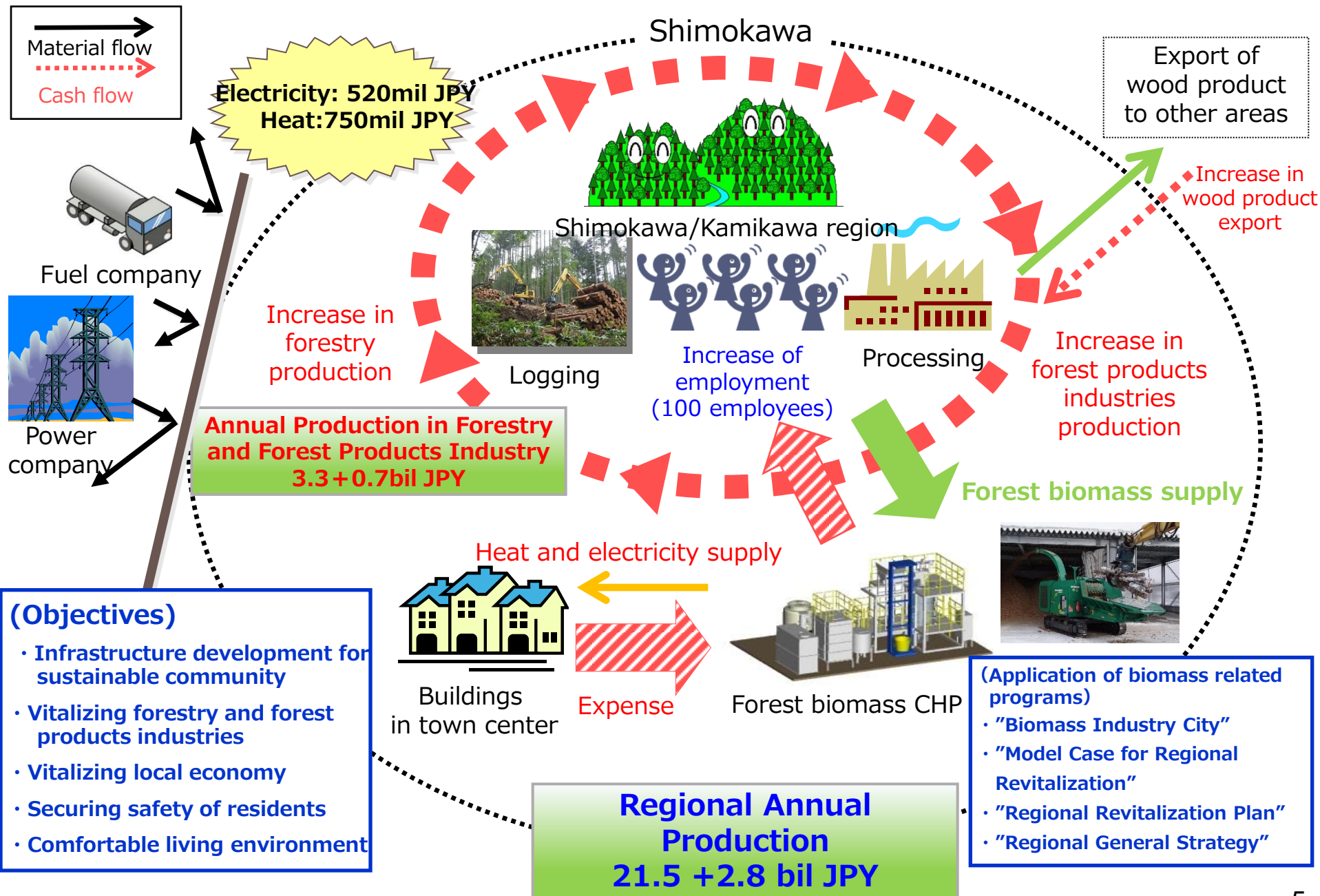
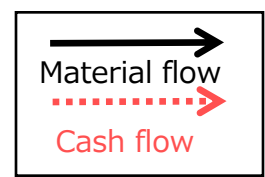
Stopped 7 years of decline trend since 2008

Extraordinary among local governments in Hokkaido
Experts underlines the local vitality due to biomass energy policy, ski jump facility, etc

Municipal Inhabitant Tax Revenue

	FY2011	FY2013	FY2013/FY2011
Individuals	108,392k JPY	111,402k JPY	2.7% increase
Corporations	10,468k JPY	12,400k JPY	18.4% increase

Regional Revitalization through Energy Self-sufficiency (Future Vision)



- (Objectives)**
- Infrastructure development for sustainable community
 - Vitalizing forestry and forest products industries
 - Vitalizing local economy
 - Securing safety of residents
 - Comfortable living environment

- (Application of biomass related programs)**
- "Biomass Industry City"
 - "Model Case for Regional Revitalization"
 - "Regional Revitalization Plan"
 - "Regional General Strategy"