

Biobased Products Alternative Agricultural Research and Commercialization Corporation (AARC)

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The AARC Corporation is a wholly-owned corporation of the US Department of Agriculture. Operating under the guidance of a largely private-sector board of directors, the Corporation functions as a venture capital firm that invests in companies commercializing non-food/non-feed products derived from agricultural raw materials. In many instances, these products replace petroleum, or make use of an agricultural waste material. Preference is given to projects that benefit rural communities and are environmentally friendly. AARCC currently has \$35 million invested in companies throughout the US.

In summary, the economy of the 21st century will be biobased and venture capital provides active assistance to build and grow companies to meet the challenge. Agriculture has always been recognized as the foundation of manufacture and commerce. Improvements in plants and animals provide greater diversity of raw materials for manufacturing and commerce, and constant improvements in biological processing make biobased raw materials more affordable. An economy based on biology is more environmentally friendly than one based on geology, i.e., petroleum. Agricultural activities serve as the engine of job creation in rural America. Industry categories of biobased products currently widely used include the following: absorbents, adhesive and bonding agents, biocontrol agents, soil media and fertilizer, cleaning agents, detergents, solvents and surfactants, coatings and paints, construction materials and composites, cosmetics and personal care products, degradable polymers, fillers, yarn and insulation, fuels, inks, lubricants, paper and packaging, pharmaceuticals and veterinary products.

Venture capital is an organized pool of high risk capital, invested in businesses with high growth potential. Venture capital provides active assistance to build management teams and to stimulate company growth. The goal is creation of wealth (with the ancillary benefit of job creation). Providing risk capital is not the role of lenders. Funding sources are limited because corporations are limited to strategic interests, the high net worth investor market is not organized, high risk activities are too small and time consuming for pension funds and other institutional investors, corporations and institutional investors may have difficulty evaluating the opportunity, e.g. lack of time and skills, and are not as likely to be able to provide assistance.

AARCC has demonstrated the ability to identify high-potential biobased investment opportunities. AARCC's portfolio balances three variables as performance measures: (1) return on investment, (2) job creation, and (3) increased use of agricultural land.

The areas of greatest potential growth in biobased products are in adhesives and bonding agents, cleaning agents/detergents/solvents/surfactants, coatings and paints, construction materials and composites, fuels, lubricants, pharmaceuticals, and fibers. Today's situation and future projections for these potential growth areas are as follows:

Adhesives and Bonding Agents

Current status: annual sales \$13.3 billion

1/3 of all adhesives products are of natural or renewable origin

Emerging trends: adhesives are projected to grow 3.3% annually through year 2000 and natural adhesives are expected to grow 3.8% annually through year 2000

AARCC investment: \$0

Cleaning Agents, Detergents, Solvents, and Surfactants

Current status: annual sales \$44.9 billion

Emerging trends: concerns about food safety and sanitation prompting continued trend towards anti-bacterial products

AARCC investment: \$1.74 million

Coatings and Paints

Current status: annual sales \$43.3 billion

Emerging trends: coatings and paints are expected to grow at an average rate of 2% and continued strong commitment to research and development of new products is projected to increase 25% by year 2005

AARCC investment: \$0

Construction Materials and Composites

Current status: annual sales \$80.4 billion

Emerging trends: prefabricated and manufactured housing is predicted to grow 20% of new housing starts by the year 2000 and agricultural based building materials will develop a growing niche if existing environmental standards are enforced

AARCC investment: \$11.8 million

Fuels

Current status: annual sales \$587.8 billion

Emerging trends: National Research Council calls for eventually satisfying up to 50% of liquid fuel needs with biobased products

AARCC investment: \$0.8 million

Lubricants

Current status: annual sales \$5.1 billion

Emerging trends: projected growth rate is 15% through year 2000; consumer demand for "green" products in the automotive sector and "natural" plant-based materials in the personal care sector will enhance opportunities for biobased end-use products

AARCC investment: \$1.89 million

Pharmaceuticals and Veterinary Products

Current status: annual sales \$169.7 billion

Emerging trends: projected growth rate is 7% through year 2000, with a likely increase as baby boom generation retires; biotechnology and agricultural-based raw materials will create new opportunities for companies in this field.

AARCC investment: \$0.66 million

Fibers

Current status: annual sales \$170 billion

Emerging trends: agricultural fibers will replace and /or supplement wood and synthetic fibers as demand increases

AARCC investment: \$1.19 million

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